ORDER NO. ARD82050140C8-10

Service Manual

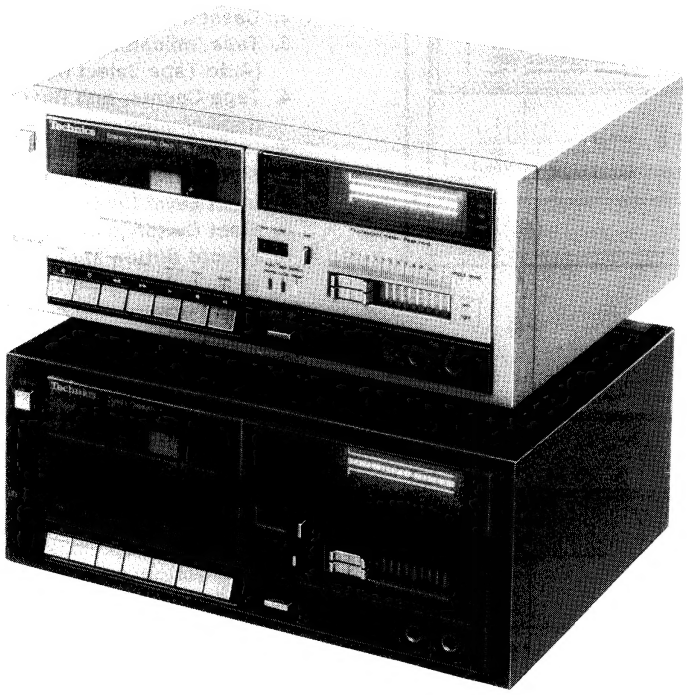
Soft-Touch Cassette Deck with
Auto Tape Selector

Cassette Deck

RS-5

(Silver Face
Black Face)

DOLBY SYSTEM



This is the Service Manual for the following areas.
- [D] ..... For all European areas except United Kingdom.
- [B] ..... For United Kingdom.
- [N] ..... For Asia, Latin America, Middle East and Africa areas.
- [A] ..... For Australia.

RS-M24 MECHANISM SERIES

Specifications

Track system:	4-track 2-channel stereo recording and playback
Tape speed:	4.8 cm/s
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)
Frequency response:	Metal tape; 20 — 17,000 Hz 30 — 15,000 Hz (DIN) CrO_2 tape; 20 — 16,000 Hz 30 — 15,000 Hz (DIN) Normal tape; 20 — 15,000 Hz 30 — 14,000 Hz (DIN)
Signal-to-noise ratio:	Dolby* NR in; 67 dB (above 5 kHz) Dolby NR out; 57 dB (signal level = max. input level A weighted, CrO_2 type tape)
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape
Inputs:	MIC; sensitivity 0.25 mV, applicable microphone impedance 400 Ω — 10 kΩ LINE; sensitivity 60 mV, input impedance more than 47 kΩ
Outputs:	LINE; output level 400 mV, output impedance 2.0 kΩ or less
Bias frequency:	80 kHz
Motor:	Electrical DC governor motor
Heads:	2-head system; 1-MX head for record/playback 1-double-gap ferrite head for erasure
Power requirement:	[D] ··· AC 220 V, 50-60 Hz [B] ··· AC 240 V, 50 Hz for United Kingdom. [N] ··· AC 110/125/220/240 V, 50-60 Hz [A] ··· AC 240 V, for Australia.
Power consumption:	[D][B][A] ··· 15 W [N] ····· 11 W
Dimensions:	31.5 cm(W) × 12.4 cm(H) × 24.8 cm(D)
Weight:	3.2 kg

Specifications are subject to change without notice.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

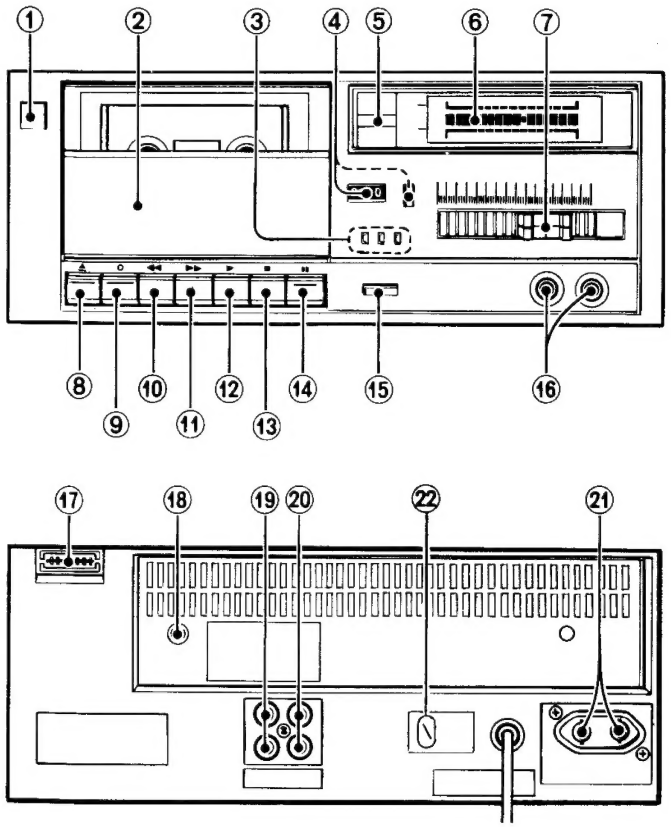
Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

RS-5

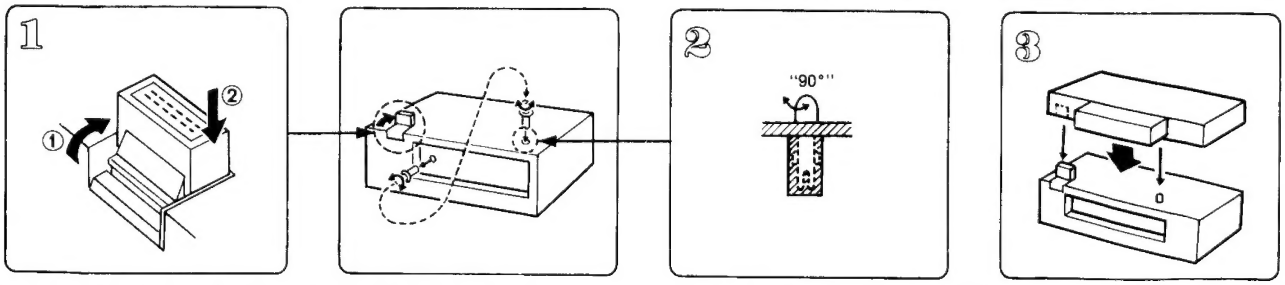
CONTENTS

LOCATION OF CONTROLS AND COMPONENTS



1. Power Switch [power (push on)]
2. Cassette Holder
3. Tape Indicators [Auto Tape Select (Normal • CrO_2 • Metal)]
4. Tape Counter and Reset Button (tape counter-reset)
5. Recording Indicators [rec]
6. FL (fluorescent level) Meters
7. Input Level Controls [input level (left • right)]
8. Eject Button [eject (▲)]
9. Record Button [rec-◷ (○)]
10. Rewind/Review Button [rew/rev (◀◀)]
11. Fast Forward/Cue Button [ff/cue (▶▶)]
12. Play Button [play-◷ (▶)]
13. Stop Button [stop (■)]
14. Pause Button [pause (❚❚)]
15. Dolby Noise-Reduction Switch [Dolby NR (▟ out • ▁ in)]
16. Microphone Jacks [mic (L • R) (Auto Input Select)]
17. Direct Connector
18. Fixing Pin
19. Line Input Jacks [LINE IN (R • L)]
20. Line Output Jacks]LINE OUT (R • L)]
21. AC Outlet Unswitched
    * DB .....For All European areas.
    * N .....For Asia, Latin America, Middle East and Africa areas.
22. AC Power Voltage Selector
    * N .....For Asia, Latin America, Middle East and Africa areas.

FOR CONNECTION WITH THE DIRECT CONNECTOR



Connections should be made in accordance with the connection diagram and the following instructions: When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.

1. For connection with the direct connector:

- Connection can be made without using the stereo pin cords when the unit and TECHNICS' SU-5 Stereo Amplifier and ST-5 FM/AM tuner are stacked up for use.
- Set the direct connector to the erect position, replace the fixing pin at the unit's rear panel on the unit's top and connect the stereo amplifier properly (the fixing pin can be removing by rotating it 90°).

Notes:

- The stereo pin cords must be detached when connection is made using the direct connector.
- Do not shake or twist the components since they will unnecessarily strain the direct connector and fixing pin and may damage them in the process.

2. For connection with the stereo pin cords

- Connection is made with the stereo pin cords when this unit is used in combination with the SU-5 stereo amplifier, ST-5 FM/AM tuner or other components.

Notes:

- Do not set the direct connector to the erect position.
- Secure the fixing pin to the unit's rear panel.

3. Location of this unit and stereo amplifier

If this unit is placed on top or next to the stereo amplifier, a "hum" noise may be heard during tape playback. Refer to the information below in order to avoid this.

- If the stereo amplifier and this unit are placed one above the other, leave as much space as possible between them, and place them where there is the least amount of hum.
- If the stereo amplifier and this unit are placed one beside the other, try reversing their positions, and place them where there is the least amount of hum.

A "click" noise may be heard when the Power Switch is turned on or off. To avoid this, be sure to set the volume control of the amplifier to the minimum position.

DISASSEMBLY INSTRUCTIONS

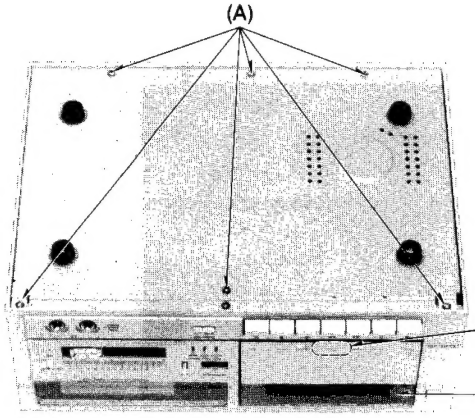


Fig. 1

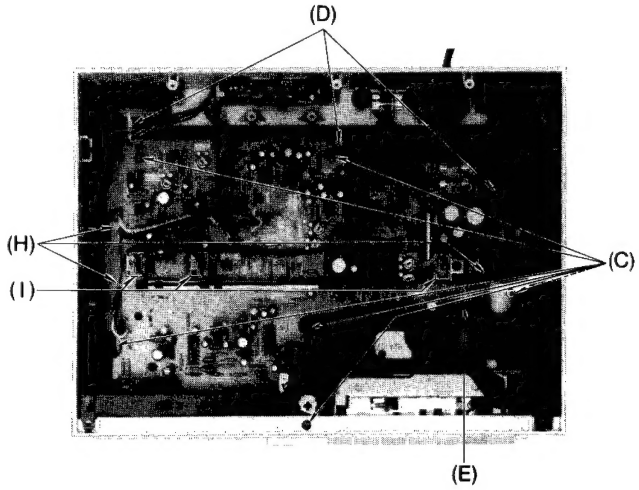


Fig. 2

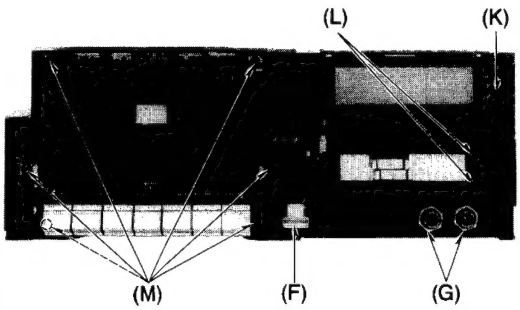


Fig. 3

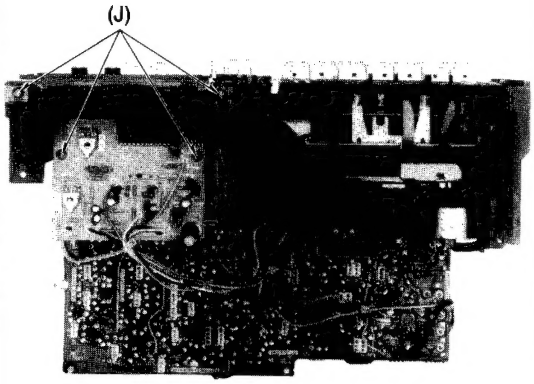


Fig. 4

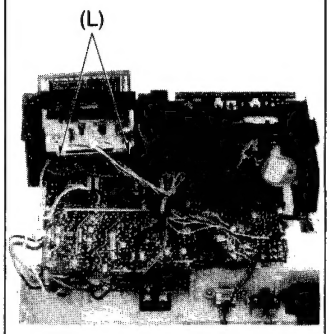


Fig. 5

Ref. No.	Procedure	To remove —— .	Remove —— .	Shown in fig. —— .
1	1	Bottom cover	• 6 screws ····· (A)	1
2	1→2	Main circuit board and mechanism unit	• Cassette lid ····· (B) • 6 screws ····· (C) • Cord clamper ····· (D)	1 2 2
3	1→2→3	Main circuit board	• Screw ····· (E) • Dolby NR switch buttom ····· (F) • 2 nuts ····· (G) • Cord clamper ····· (H) • 3 connectors ····· (I)	2 3 3 2 2
4	1→2→4	FL meter circuit board	• 4 screws ····· (J) • Meter cover-B and meter filter ····· (K)	4 3
5	1→2→5	Input level control circuit board	• 4 screws ····· (L)	3, 5
6	1→2→6	Mechanism unit	• 6 screws ····· (M)	3

ASSEMBLY NOTES:

Precautions for mounting the input level control knob assembly

- Move the input level control lever and the input level control knob assembly to the right. Check that they engage each other as shown in fig. 6 and install the slide guide.

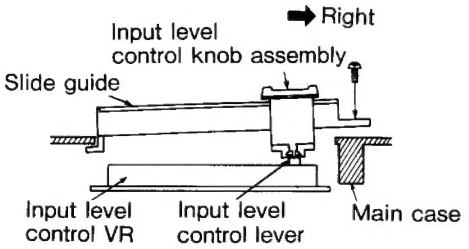
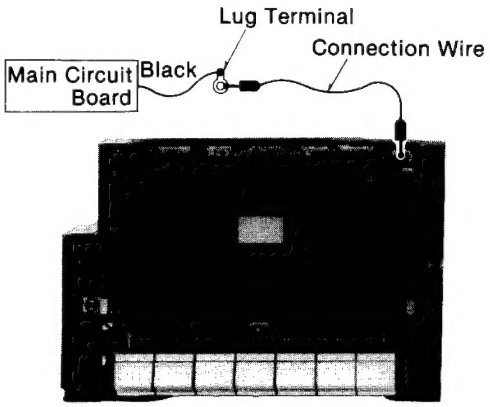


Fig. 6

MECHANISM SECTION

1. For repair, measurement or adjustment with the mechanism removed from the unit be sure to ground the lower base plate of the mechanism.
2. For grounding, connect a extension cord to the mechanism's lower base plate and the lug terminal from amplifier printed circuit board.
3. Without grounding, the amplifier does not operate properly.



MEASUREMENT AND ADJUSTMENT METHODS

NOTE:

Tape speed can be adjusted through the small hole on the back-side of main case by the ⊖ screw driver (non metal type) as shown in fig. 1.

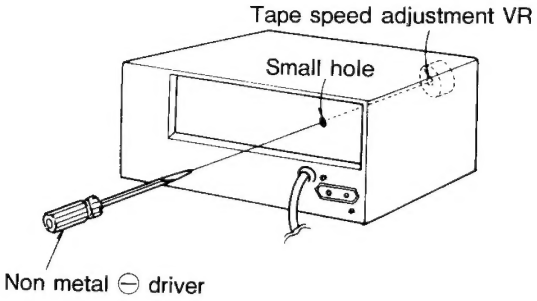


Fig. 1

ADJUSTMENT PARTS LOCATION

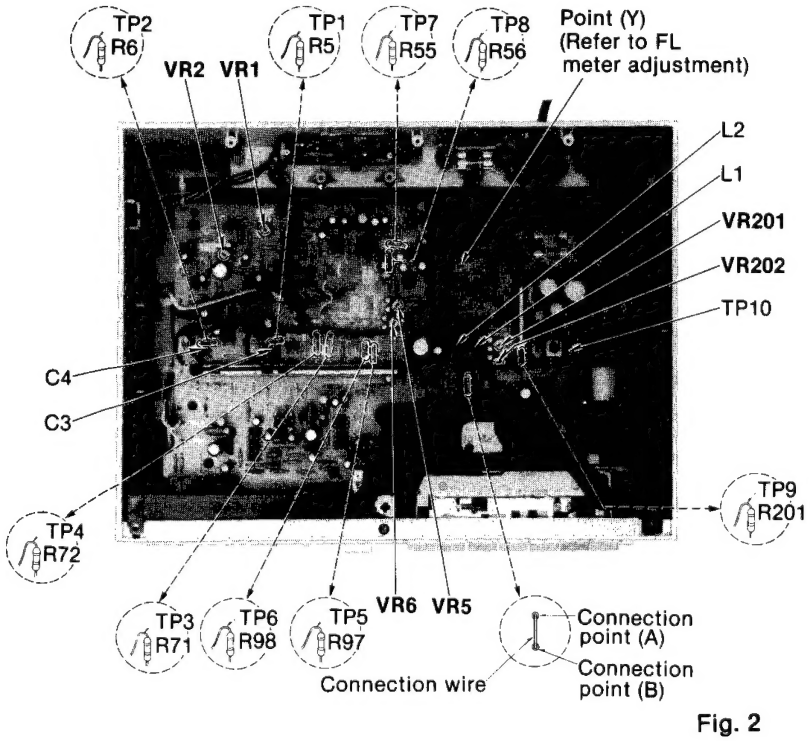
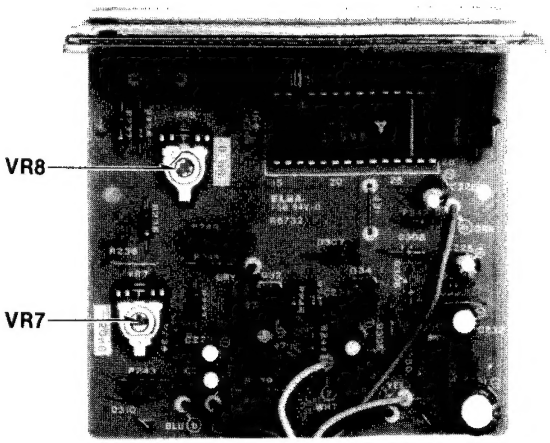
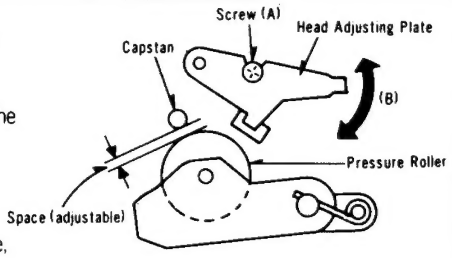
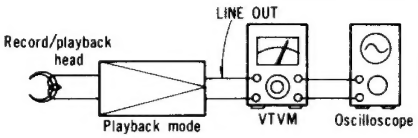
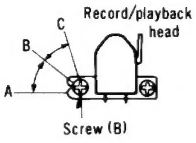
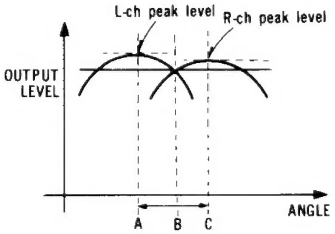
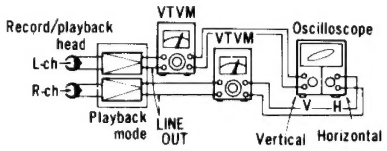
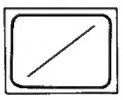
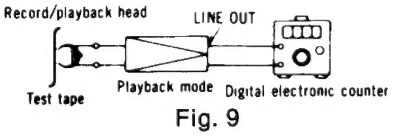


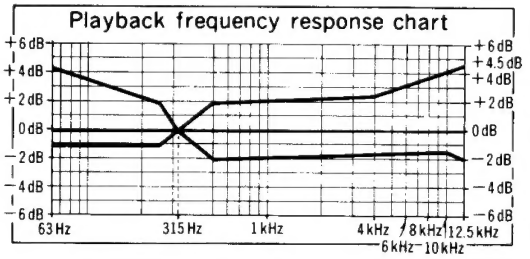
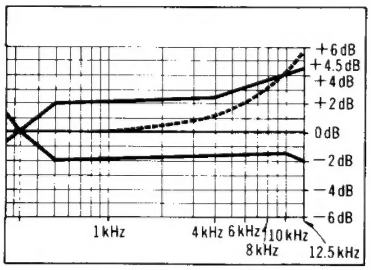
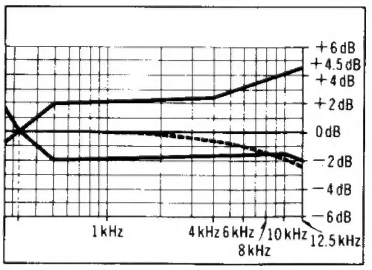
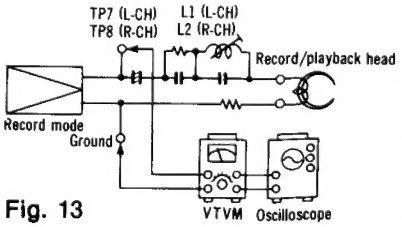
Fig. 2



NOTES: Keep good condition, set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature: 20 ± 5°C (68 ± 9°F)
- Dolby NR switch: OUT
- Input level controls: Maximum

ITEM	MEASUREMENT & ADJUSTMENT
Ⓐ Head position adjustment Condition: • Playback and pause mode	(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.) 1. Press the playback button and pause button. 2. Measure the space between the pressure roller and the capstan. **Standard value: 0.5 ± 0.3 mm** 3. If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow (B) for adjustment.  Fig. 3
Ⓑ Head azimuth adjustment Condition: • Playback mode • Normal tape mode Equipment: • VTVM • Oscilloscope • Test tape (azimuth) ··· QZZCFM	**L-ch/R-ch output balance adjustment** 1. Make connections as shown in fig. 4.  Fig. 4 2. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 5 for maximum output L-ch and R-ch levels. When the output levels of L-ch and R-ch are not at maximum at the same time, readjust as follows. 3. Turn the screw shown in fig. 5 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate the angle B between angles A and C, i.e., a point where L-ch and R-ch output levels come together at maximum. (Refer to figs. 5 and 6.)  Fig. 5  Fig. 6 **L-ch/R-ch phase adjustment** 4. Make connections as shown in fig. 7. 5. Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 5 so that pointers of the two VTVMs swing to maximum and a waveform as illustrated in fig. 8 is obtained on the oscilloscope.  Fig. 7  Fig. 8
Ⓒ Tape speed Condition: • Playback mode • Normal tape mode Equipment: • Digital electronic counter or frequency counter • Test tape ··· QZZCWAT	**Tape speed accuracy** 1. Test equipment connection is shown in fig. 9. 2. Playback test tape (QZZCWAT 3,000 Hz), and supply playback signal to frequency counter. 3. Take measurement at middle section of tape. 4. Measure this frequency. 5. On the basis of 3,000 Hz, determine value by following formula: $\text{Tape speed accuracy} = \frac{f - 3{,}000}{3{,}000} \times 100\,(\%)$ where, f = measured value **Standard value: ± 1.5%**  Fig. 9 **Adjustment method** 1. Playback the test tape (middle) 2. Adjust so that frequency becomes 3,000 Hz. 3. Tape speed adjustment VR shown in fig. 1.

ITEM	MEASUREMENT & ADJUSTMENT
	Tape speed fluctuation Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows: Tape speed fluctuation = $\frac{f_1 - f_2}{3{,}000} \times 100\,(\%)$ f_1 = maximum value, f_2 = minimum value **Standard value: Less than 1%** **Note:** Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.
Ⓓ Playback frequency response Condition: * Playback mode * Normal tape mode Equipment: * VTVM * Oscilloscope * Test tape ··· QZZCFM	1. Test equipment connection is shown in fig. 4. 2. Place UNIT into playback mode. 3. Playback the frequency response test tape (QZZCFM). 4. Measure output level at 315 Hz, 12.5 kHz, 8 kHz, 4 kHz, 1 kHz, 250 Hz, 125 Hz and 63 Hz, and compare each output level with the standard frequency 315 Hz, at LINE OUT 5. Make measurement for both channels. 6. Make sure that the measured value is within the range specified in the frequency response chart (shown in fig. 10). Playback frequency response chart  Fig. 10 **Adjustment** 1. If the measurement value increases in the high frequency range, as shown in fig. 11, remove capacitor C3 (L-CH) and C4 (R-CH) (Refer to fig. 2). **Compensation value** 6 kHz: −0.2 dB; 8 kHz: −0.4 dB; 10 kHz: −0.8 dB; 12.5 kHz: −1.2 dB  Fig. 11 2. If the measurement value decreases in the high frequency range, as shown in fig. 12, insert and solder capacitors C3 (L-CH) and C4 (R-CH). **Compensation value** 6 kHz: +0.2 dB; 8 kHz: +0.4 dB; 10 kHz: +0.8 dB; 12.5 kHz: +1.2 dB **Capacitors** Ref. No. C3, C4: Part No. ECKD1H271KB  Fig. 12
Ⓔ Playback gain Condition: * Playback mode * Normal tape mode Equipment: * VTVM * Oscilloscope * Test tape ··· QZZCFM	1. Test equipment connection is shown in fig. 4. 2. Playback standard recording level portion on test tape (QZZCFM 315 Hz), and using VTVM measure the output level at LINE OUT. 3. Make measurement for both channels. **Standard value: 0.4 V ± 2 dB [around 0.42 V: at test points TP3 (L-CH) and TP4 (R-CH)]** **Adjustment** 1. If measured value is not within standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 2 on page 4). 2. After adjustment, check "Playback frequency response" again.
Ⓕ Bias leakage Condition: * Record mode * Metal tape mode Equipment: * VTVM * Oscilloscope	1. Test equipment connection is shown in fig. 13. 2. Place UNIT into record mode. 3. Adjust trap coil L1 (L-CH), L2 (R-CH), so that measured value on VTVM becomes minimum. 4. Take adjustment for both channels.  Fig. 13

ITEM	MEASUREMENT & ADJUSTMENT
G Erase current Condition: • Record mode • Metal tape mode Equipment: • VTVM • Oscilloscope	1. Test equipment connection is shown in fig. 14. 2. Place UNIT into record and metal tape mode and then measure voltage at test point 9. 3. Read voltage on VTVM and calculate erase current by following formula: $\text{Erase current (A)} = \frac{\text{Voltage across both ends of R201}}{1\ (\Omega)}$ **Standard value: 155±15mA (Metal position)** 4. If measured value is not within standard, adjust as follows. **Adjustment** 1. Open the point (A) and short the point (B) on the main circuit board in the wiring connection diagram (See page 15). 2. Make measurement for erase current. 3. Make sure that the measured value is within the erase current of 140mA to 170mA. 4. If it is beyond the value, carry out the following adjustments: • If the erase current is less than 140mA, short the point (A) and (B). • If the erase current is more than 170mA, open the points (A) and (B).
H Overall frequency response Condition: • Record/playback mode • Normal tape mode • CrO_2 tape mode • Metal tape mode • Input level controls ··· MAX Equipment • VTVM • AF oscillator • ATT • Oscilloscope • Resistor (600Ω) • Test tape (reference blank tape) ···QZZCRA for Normal ···QZZCRX for CrO_2 ···QZZCRZ for Metal	**Note :** Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response). **Overall frequency response adjustment by recording bias current** (Recording equalizer is fixed) 1. Make connections as shown in fig. 17. 2. Place the UNIT into normal tape mode and load the test tape (QZZCRA). 3. Input a 1kHz, −24dB signal through LINE IN. Place the set in record mode. 4. Fine adjust the attenuator to obtain 0.4V·LINE OUT output. • Make sure that the input signal level is −24 ± 4dB with 0.4V output voltage. 5. Adjust the attenuator to reduce the input signal level by 20dB. 6. Adjust the AF oscillator to generate 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz and 12kHz signals, and record these signals on the test tape. 7. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 15). (If the curve is within the charted specifications, proceed to steps 8, 9 and 10.) If the curve is not within the charted specifications, adjust as follows: **Adjustment Ⓐ:** When the curve exceeds the overall frequency response chart specifications (fig. 15) as shown in fig. 18. **Adjustment Ⓑ:** When the curve falls below the overall frequency response chart specifications (fig. 15) as shown in fig. 19.

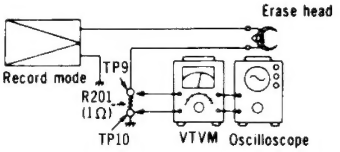


Fig. 14

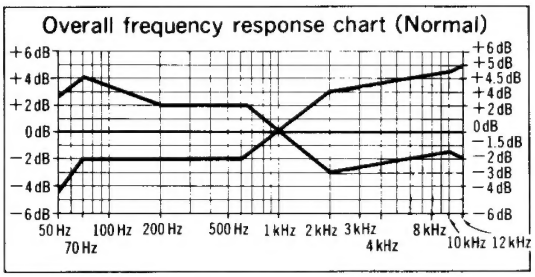


Fig. 15

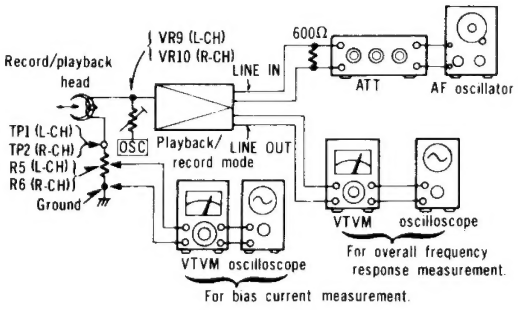


Fig. 17

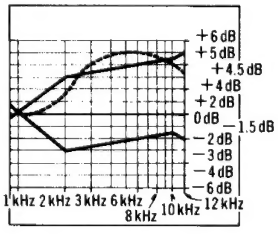


Fig. 18

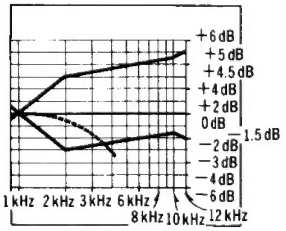
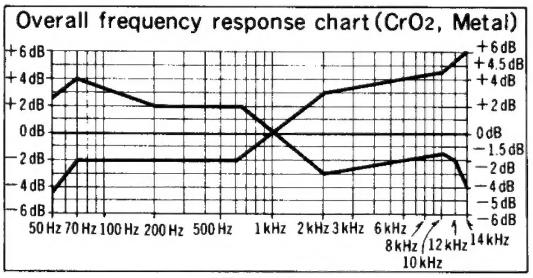
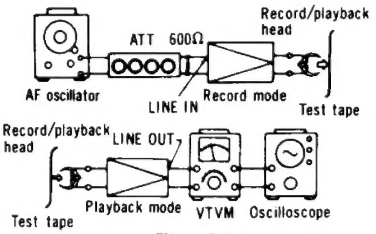
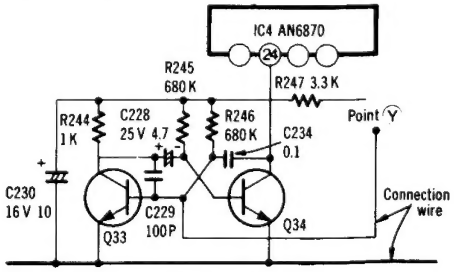
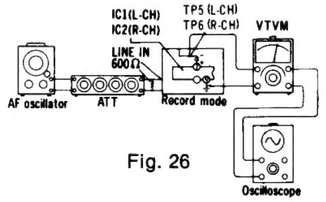
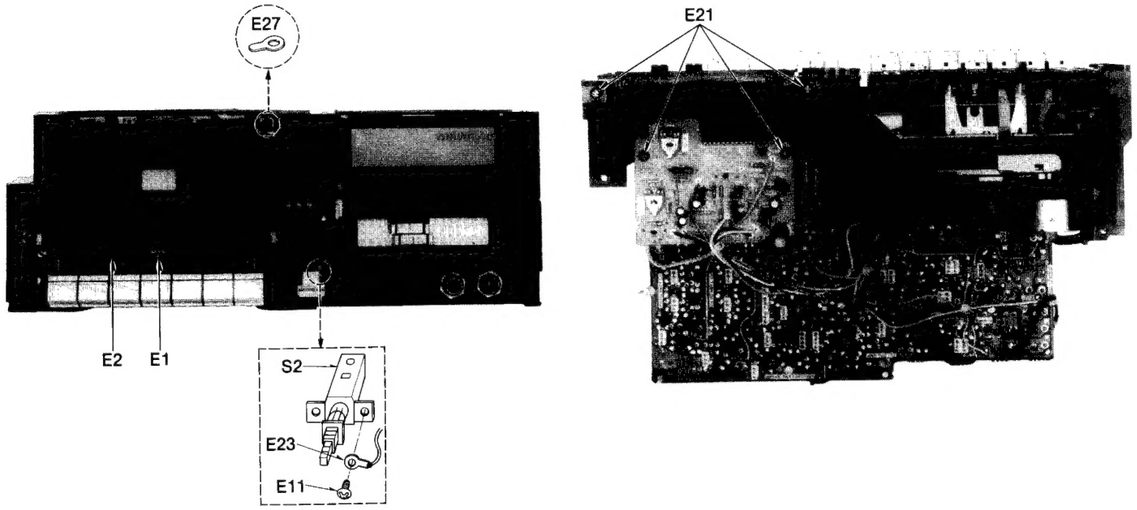


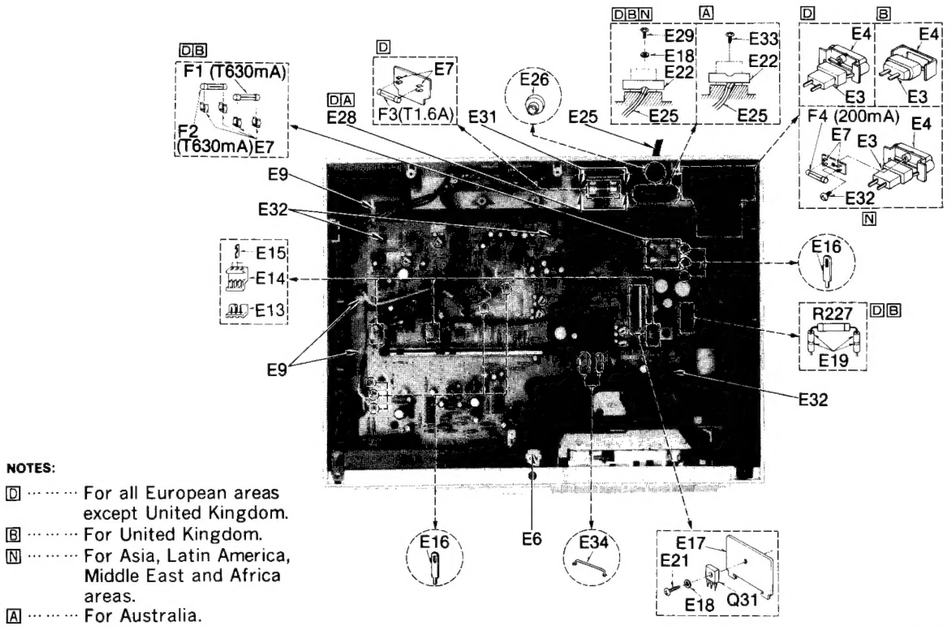
Fig. 19

ITEM	MEASUREMENT & ADJUSTMENT
	1) Increase bias current by turning VR201 (L-CH) and VR202 (R-CH). (See fig. 1 on page 4.) 2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 15.) 3) If the curve still exceeds the specifications (fig. 15), increase bias current further and repeat steps 6 and 7. 1) Reduce bias current by turning VR201 (L-CH) and VR202 (R-CH). 2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 15.) 3) If the curve still falls below the charted specifications (fig. 15), reduce bias current further and repeat steps 6 and 7. 8. Switch the tape selector to CrO_2, change test tape to QZZCRX, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO_2 tapes (fig. 20).  Fig. 20 9. Switch the tape selector to Metal, change test tape to QZZCRZ, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz and 12.5kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 20). 10. Confirm that bias currents are approximately as follows when the tape selector is set at different positions. • Read voltage on VTVM and calculate bias current by following formula: $\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10\ (\Omega)}$ around 400μA (Normal position) around 600μA (CrO_2 position) around 1000μA (Metal position) } : measured at TP1 (L-CH) and TP2 (R-CH)
❶ Overall gain Condition: • Record/playback mode • Normal tape mode • Input level controls ··· MAX • Standard input level; MIC ····· −72±3.5dB LINE IN ··· −24±3.5dB Equipment: • VTVM • AF oscillator • ATT • Oscilloscope • Resistor (600Ω) • Test tape (reference blank tape) ··· QZZCRA for Normal	1. Test equipment connection is shown in fig. 21. 2. Place the UNIT into normal tape mode and load the test tape (QZZCRA). 3. Place UNIT into record mode. 4. Supply 1kHz signal (−24dB) from AF oscillator, through ATT to LINE IN. 5. Adjust ATT until monitor level at LINE OUT becomes 0.4V. 6. Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes 0.4V. 7. If measured value is not 0.4V, adjust VR5 (L-CH), VR6 (R-CH) (See fig. 2 on page 4). 8. Repeat from step (2).  Fig. 21
❷ Fluorescent meter Condition: • Record mode • Input level controls ···· MAX Equipment: • VTVM • AF oscillator • ATT • Oscilloscope • Resistor (600Ω)	1. Test equipment connection is shown in fig. 21. 2. As shown in fig. 22, connect the base of Q33 and ground. 3. Supply 1kHz signal (−24dB) to the LINE IN jack, then press the record button. 4. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4V (The input level at this condition is termed the standard input level). 5. Adjustment at "−20dB": A. Adjust the ATT so that input level is −20dB below standard recording level. B. Adjust VR7 so that the −20dB segment lights up in the −20±0.8dB range (L-CH ONLY) (See fig. 23).  Fig. 22

ITEM	MEASUREMENT & ADJUSTMENT
	6. Adjustment at "0dB": A. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4 V. (The input level at this condition is termed the standard input level.) B. Adjust VR8 so that the +1 dB segment lights up in the 0±0.2 dB range of the standard input level (See fig. 24). 7. Repeat twice between steps 5 and 6 above. 8. Adjust ATT and check that all segments light up when an input signal level is increased to 10 dB higher than the standard input level (See fig. 25).  Fig. 23  Fig. 24  Fig. 25
Ⓚ Dolby NR circuit Condition: • Record mode • Dolby NR switch ··· IN/OUT • Input level controls ··· MAX Equipment: • VTVM • AF oscillator • ATT • Oscilloscope • Resistor (600 Ω)	1. Test equipment connection is shown in fig. 26. 2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain −34.5 dB at TP5 (L-CH), TP6 (R-CH) (frequency 5 kHz). 3. Confirm that the value at IN position is 8 (±2.5) dB greater than the value at OUT position of Dolby NR switch.  Fig. 26

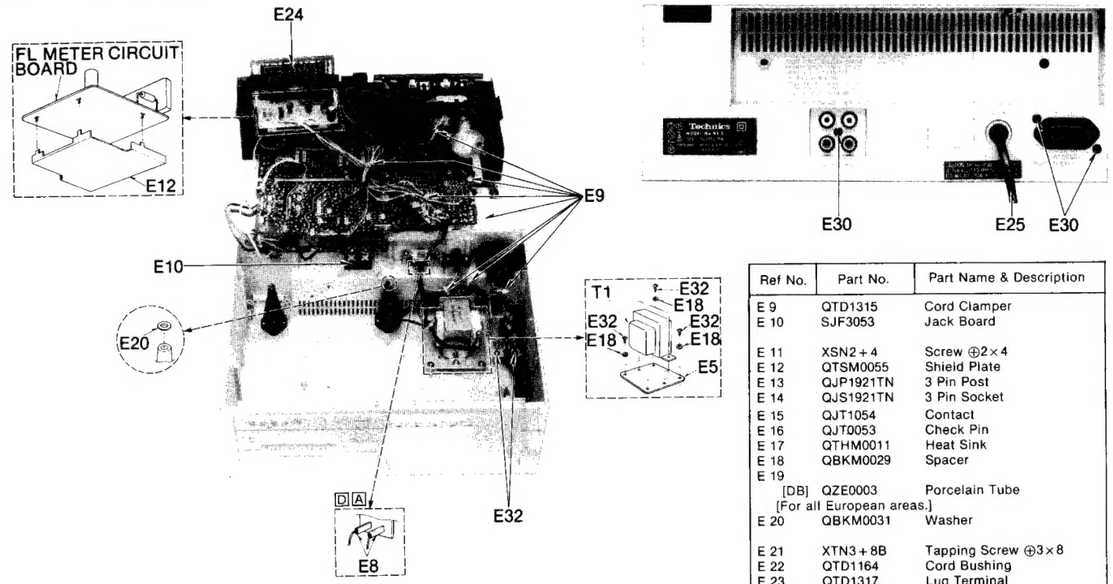
ELECTRICAL PARTS LOCATION





NOTES:

- D ····· For all European areas except United Kingdom.
- B ····· For United Kingdom.
- N ····· For Asia, Latin America, Middle East and Africa areas.
- A ····· For Australia.



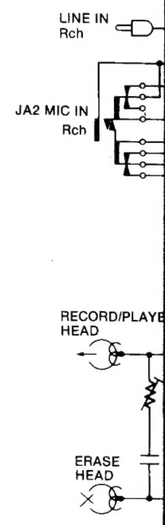
REPLACEMENT PARTS LIST

Important safety notice
Components identified by △ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

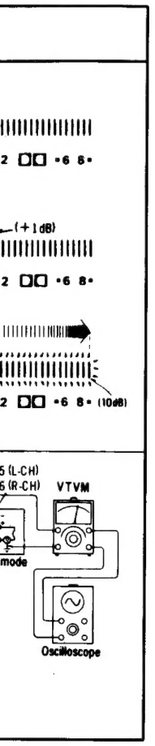
Ref No.	Part No.	Part Name & Description
	ELECTRICAL PARTS	
E 1	QWY4122Z	Record/Playback Head
E 2	QWY2138Z	Erase Head
E 3		
[B] △	SJS9225	AC Outlet Socket [For United Kingdom.]
[DN] △	SJS9225	AC Outlet Socket [For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]
E 4 [B]	QMAM0154	AC Outlet Socket Holding [For United Kingdom]
[DN]	QKJM0086	Angle AC Outlet Socket Holding Plate [For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]
E 5	QMFM0016	Transformer Holding Plate
E 6	QTSM0045	Shield Plate
E 7		
[D] △	QTF1054	Fuse Holder [For all European areas except United Kingdom.]
[N] △	QTF1051	Fuse Holder [For Asia, Latin America, Middle East and Africa areas.]
E 8		
[DA]	SJT777	Terminal [For all European areas and Australia.]

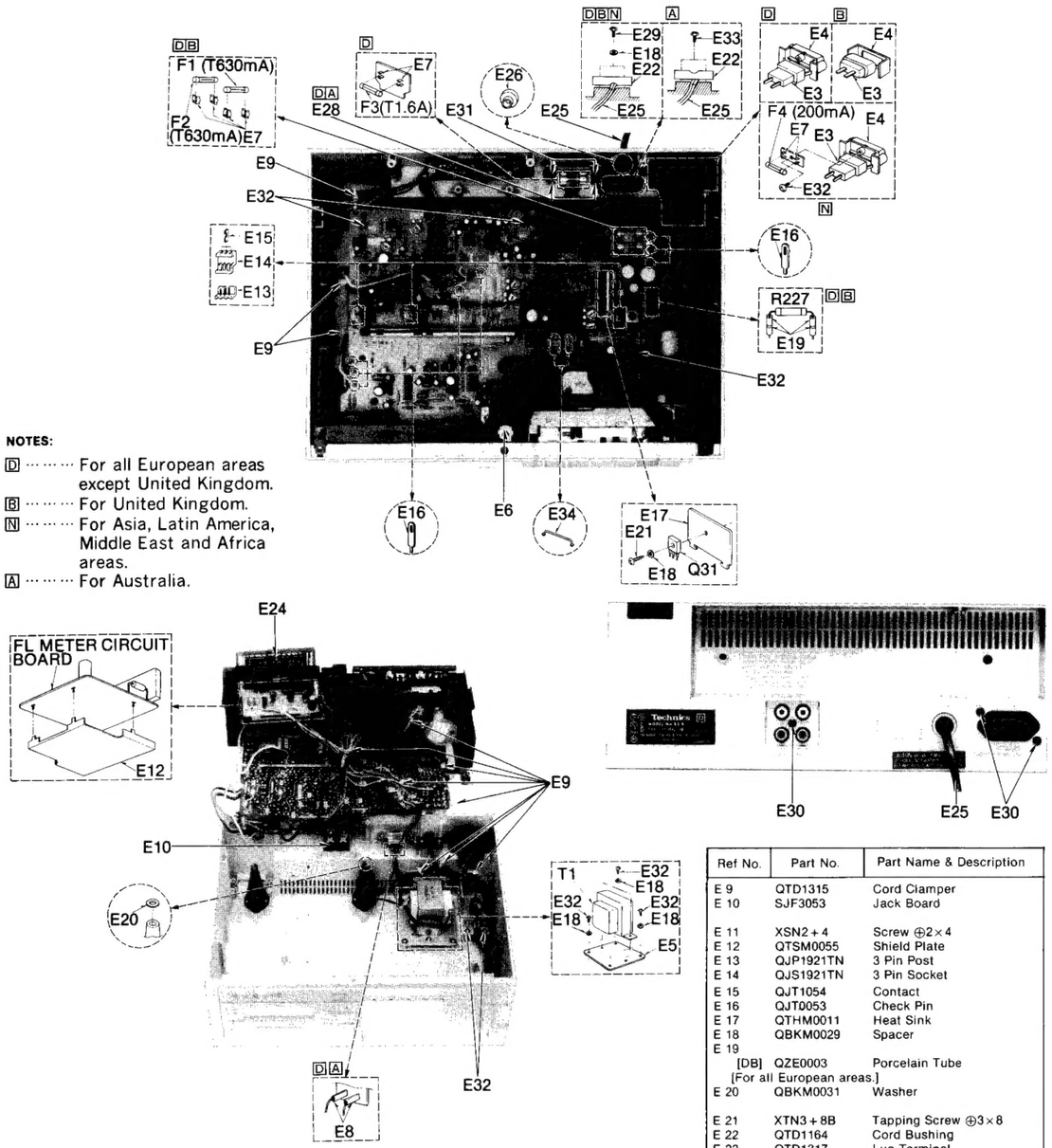
Ref No.	Part No.	Part Name & Description
E 9	QTD1315	Cord Clamper
E 10	SJF3053	Jack Board
E 11	XSN2+4	Screw ⊕2×4
E 12	QTSM0055	Shield Plate
E 13	QJP1921TN	3 Pin Post
E 14	QJS1921TN	3 Pin Socket
E 15	QJT1054	Contact
E 16	QJT0053	Check Pin
E 17	QTHM0011	Heat Sink
E 18	QBKM0029	Spacer
E 19		
[DB]	QZE0003	Porcelain Tube [For all European areas.]
E 20	QBKM0031	Washer
E 21	XTN3+8B	Tapping Screw ⊕3×8
E 22	QTD1164	Cord Bushing
E 23	QTD1317	Lug Terminal
E 24	QSIFL006F	FL Meter
E 25		
[B] △	SJA149	AC Power Cord [For United Kingdom.]
[A] △	QFC1208M	AC Power Cord [For Australia.]
[DN] △	SJA151	AC Power Cord [For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]
E 26	QBJ1425	Cord Bushing
E 27	QTD1001	Lug Terminal
E 28		
[DB] △	QBK7178	Washer [For all European areas.]
E 29	XTN3+16B	Tapping Screw ⊕3×16
E 30	XTB3+10BFZ	Tapping Screw ⊕3×10
E 31	XTN3+8B	Tapping Screw ⊕3×8
E 32	XTN3+10B	Tapping Screw ⊕3×10
E 33	XTB3+12B	Screw ⊕3×12
E 34	QJT1077	Jumper Wire

■ RECORD S



■ PLAYBACK





NOTES:

- D ····· For all European areas except United Kingdom.
- B ····· For United Kingdom.
- N ····· For Asia, Latin America, Middle East and Africa areas.
- A ····· For Australia.

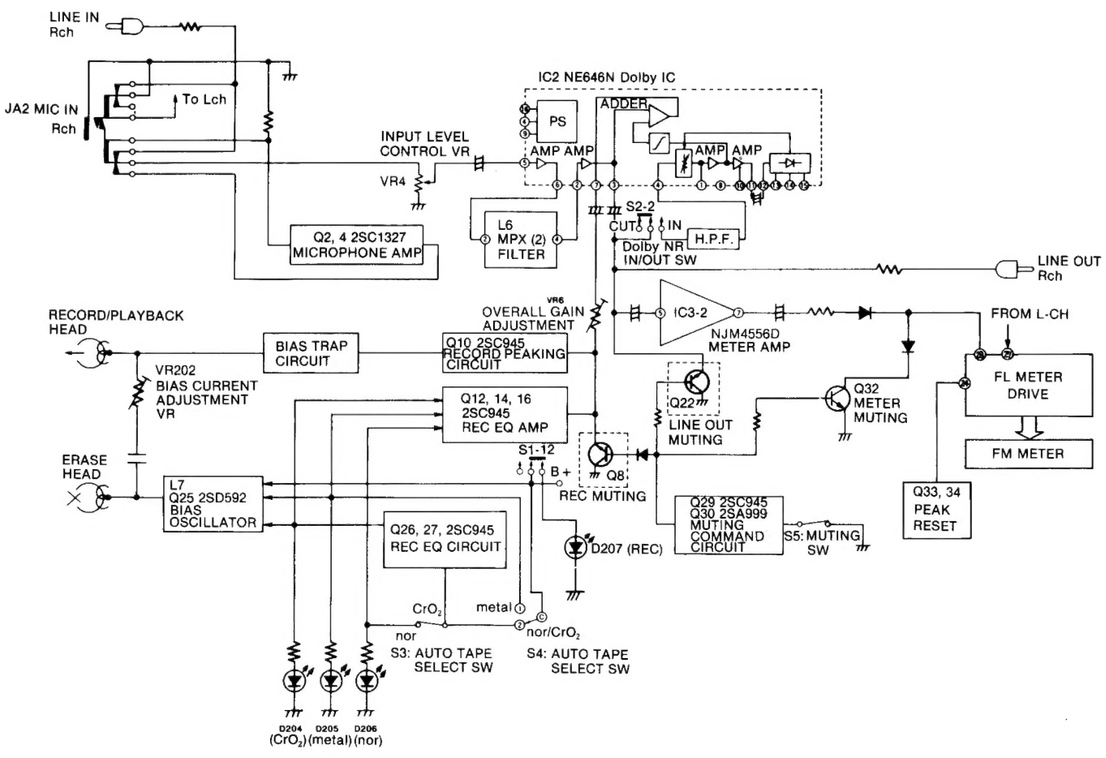
REPLACEMENT PARTS LIST

Important safety notice
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

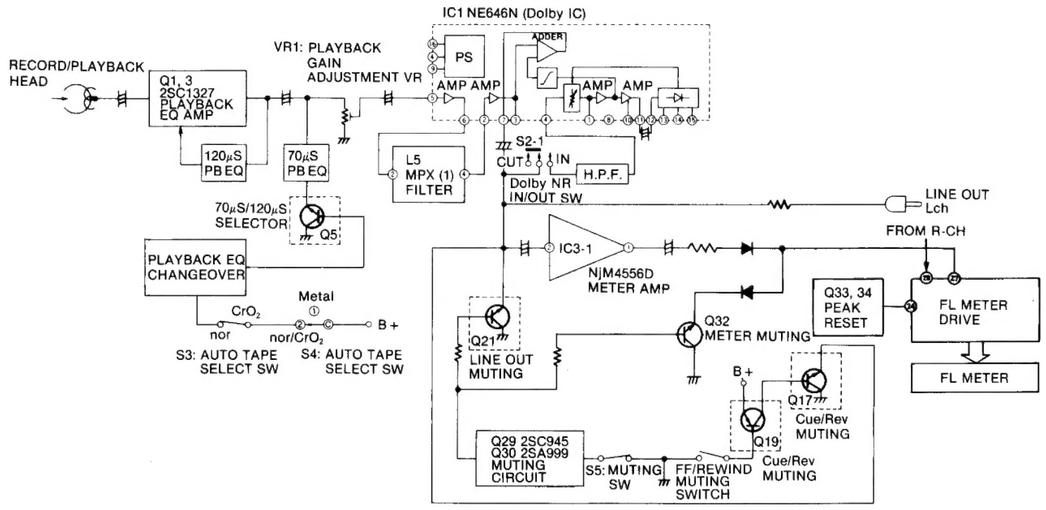
Ref No.	Part No.	Part Name & Description
		ELECTRICAL PARTS
E 1	QWY4122Z	Record/Playback Head
E 2	QWY2138Z	Erase Head
E 3		
	[B] ⚠ SJS9225	AC Outlet Socket
	[For United Kingdom.]	
	[DN] ⚠ SJS9225	AC Outlet Socket
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 4	[B] QMAM0154	AC Outlet Socket Holding Angle
	[For United Kingdom]	
	[DN] QKJM0086	AC Outlet Socket Holding Plate
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 5	QMFM0016	Transformer Holding Plate
E 6	QTSM0045	Shield Plate
E 7		
	[D] ⚠ QTF1054	Fuse Holder
	[For all European areas except United Kingdom.]	
	[N] ⚠ QTF1051	Fuse Holder
	[For Asia, Latin America, Middle East and Africa areas.]	
E 8		
	[DA] SJT777	Terminal
	[For all European areas and Australia.]	
E 9	QTD1315	Cord Clamper
E 10	SJF3053	Jack Board
E 11	XSN2+4	Screw ⊕2×4
E 12	QTSM0055	Shield Plate
E 13	QJP1921TN	3 Pin Post
E 14	QJS1921TN	3 Pin Socket
E 15	QJT1054	Contact
E 16	QJT0053	Check Pin
E 17	QTHM0011	Heat Sink
E 18	QBKM0029	Spacer
E 19		
	[DB] QZE0003	Porcelain Tube
	[For all European areas.]	
E 20	QBKM0031	Washer
E 21	XTN3+8B	Tapping Screw ⊕3×8
E 22	QTD1164	Cord Bushing
E 23	QTD1317	Lug Terminal
E 24	QSIFL006F	FL Meter
E 25		
	[B] ⚠ SJA149	AC Power Cord
	[For United Kingdom.]	
	[A] ⚠ QFC1208M	AC Power Cord
	[For Australia.]	
	[DN] ⚠ SJA151	AC Power Cord
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 26	QBJ1425	Cord Bushing
E 27	QTD1001	Lug Terminal
E 28		
	[DB] ⚠ QBK7178	Washer
	[For all European areas.]	
E 29	XTN3+16B	Tapping Screw ⊕3×16
E 30	XTB3+10BFZ	Tapping Screw ⊕3×10
E 31	XTN3+8B	Tapping Screw ⊕3×8
E 32	XTN3+10B	Tapping Screw ⊕3×10
E 33	XTB3+12B	Screw ⊕3×12
E 34	QJT1077	Jumper Wire

BLOCK DIAGRAM

■ RECORD SYSTEM (R-CH ONLY)



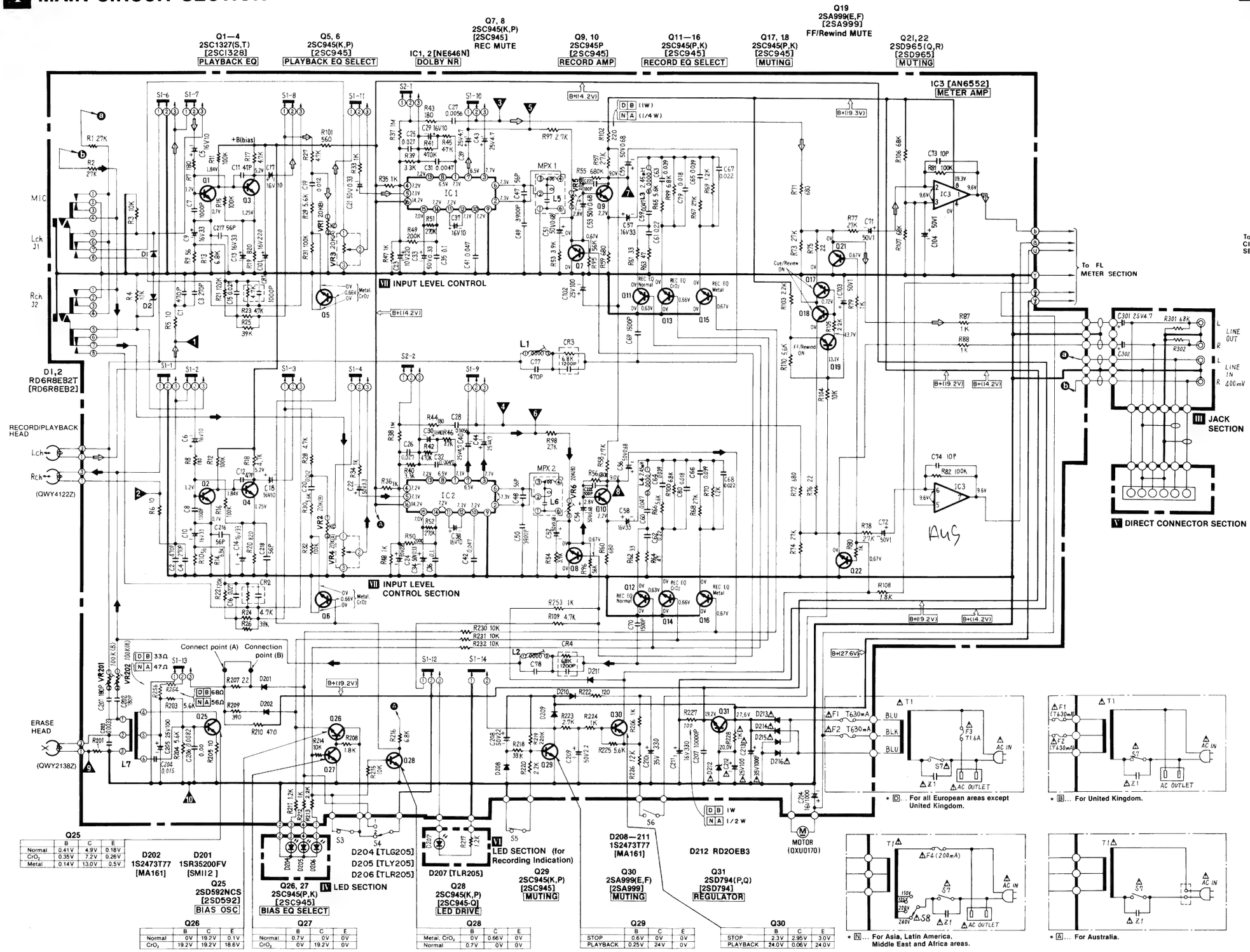
■ PLAYBACK SYSTEM (L-CH ONLY)



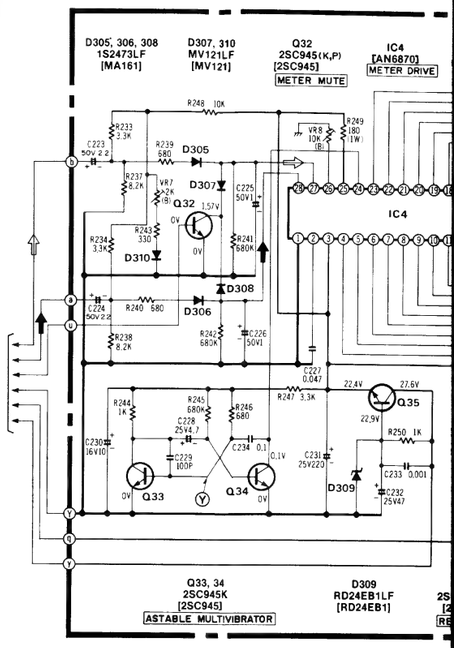
RS-5

SCHEMATIC DIAGRAM

I MAIN CIRCUIT SECTION



II FL METER SECTION



SPECIFICATIONS

* Input level cor

Playback S/N ratio * Test tape···QZZCFM	More (with
Overall distortion * Test tape ···QZZCRA for Normal ···QZZCRX for CrO_2 ···QZZCRZ for Metal	Less than Less than
Overall S/N radio * Test tape···QZZCRX	More (with

NOTES:

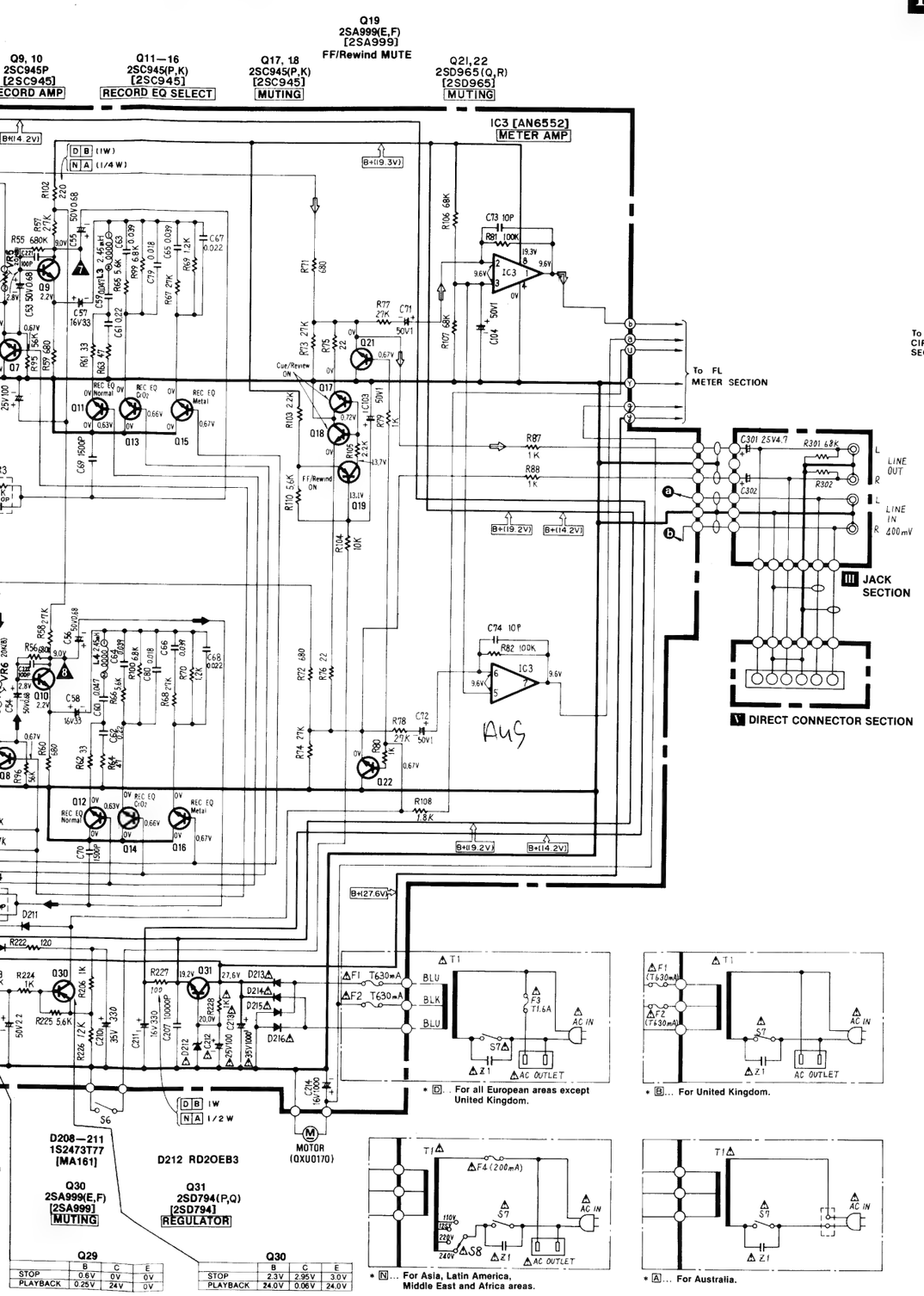
- S1-1—S1-14.....Record/Playback select switch (shown in playback p
- S2-1—S2-2 .....Dolby NR IN/OUT select switch (shown in out positio
- S3.....Auto tape select switch (shown in Normal position).
- S4.....Auto tape select switch.
  (1...Metal position, 2...Normal position, CrO_2 positio
- S5.....Muting switch.
- S6.....FF/Rewind muting switch.
- S7.....Power ON/OFF switch.
- S8.....AC power voltage select switch.
  ※ For Asia, Latin America, Middle East and Africa a
- VR1, 2 .....Playback gain adjustment VR.
- VR3, 4 .....Input level controls.
- VR5, 6 .....Overall gain adjustment VR.
- VR7 .....FL meter adjustment VR (for −20dB indication).
- VR8 .....FL meter adjustment VR (for 0dB indication).
- VR201, 202 .....Bias current adjustment VR.
- L1, 2 .....Bias leakage adjustment coil.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1K = 1,000Ω, M = 1,000KΩ.
- Capacity are micro farads (μF) unless specified otherwise.
  P = Pico-farads.
- The mark (▼) shows test point. e.g. ▼ = Test point 1.
- (⇨) this arrow indicates the flow of the playback signal.
- (➡) this arrow indicates the flow of the recording signal.

* [D]... For all European areas except United Kingdom.

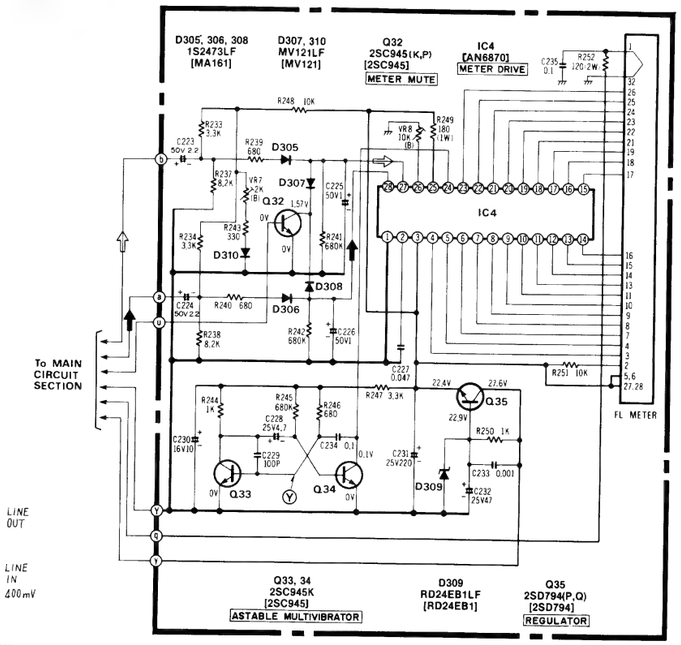
* [B]... For United Kingdom.

* [N]... For Asia, Latin America, Middle East and Africa areas.

* [A]... For Australia.



II FL METER SECTION



SPECIFICATIONS

* Input level controls ····· MAX

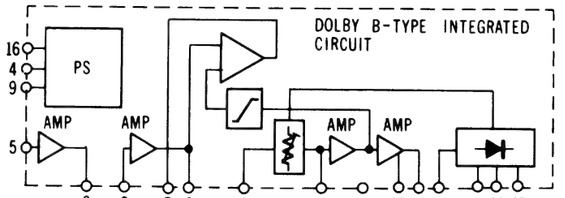
Playback S/N ratio * Test tape···QZZCFM	More than 45dB (without NAB filter)
Overall distortion * Test tape ···QZZCRA for Normal ···QZZCRX for CrO_2 ···QZZCRZ for Metal	Less than 3%(Normal) Less than 3.5% (CrO_2, Metal)
Overall S/N radio * Test tape···QZZCRX	More than 46dB (without NAB filter)

NOTES:

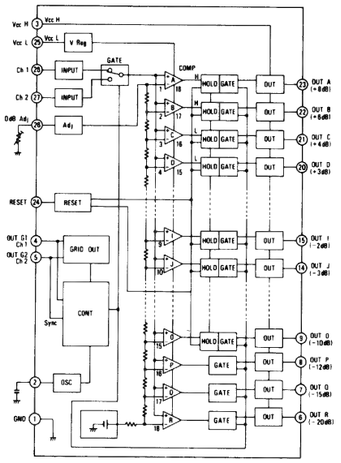
- S1-1—S1-14.....Record/Playback select switch (shown in playback position).
- S2-1—S2-2 .....Dolby NR IN/OUT select switch (shown in out position).
- S3.....Auto tape select switch (shown in Normal position).
- S4.....Auto tape select switch.
  (1...Metal position, 2...Normal position, CrO_2 position)
- S5.....Muting switch.
- S6.....FF/Rewind muting switch.
- S7.....Power ON/OFF switch.
- S8.....AC power voltage select switch.
  ※ For Asia, Latin America, Middle East and Africa areas.
- VR1, 2 .....Playback gain adjustment VR.
- VR3, 4 .....Input level controls.
- VR5, 6 .....Overall gain adjustment VR.
- VR7 .....FL meter adjustment VR (for −20dB indication).
- VR8 .....FL meter adjustment VR (for 0dB indication).
- VR201, 202 .....Bias current adjustment VR.
- L1, 2 .....Bias leakage adjustment coil.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  1K = 1,000Ω, M = 1,000KΩ.
- Capacity are micro farads (μF) unless specified otherwise.
  P = Pico-farads.
- The mark (▼) shows test point. e.g. ▼ = Test point 1.
- (⟹) this arrow indicates the flow of the playback signal.
- (➡) this arrow indicates the flow of the recording signal.

EQUIVALENT CIRCUIT

IC1, 2 NE646N



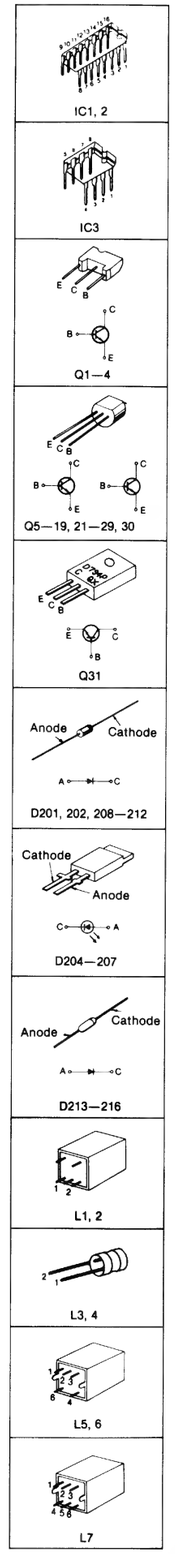
IC4 AN6870



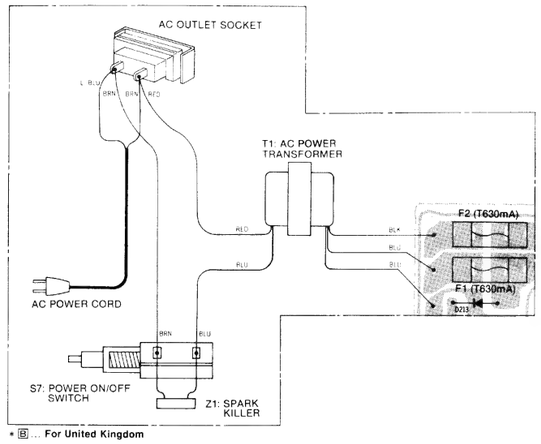
- All voltage values shown in circuitry are under no signal condition.
  Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
  Normal .....Voltage at normal tape mode
  Cue/review OFF.....Voltage at modes other than cue/review
  Stop .....Voltage at stop mode
  Playback.....Voltage at playback mode
  For measurent, use VTVM.
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.
- Described in the schematic diagram are two types of number; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.
  e.g. Q1
  {2SC1327(S,T)——Production parts number
  {[2SC1328]——Supply parts number
  D208
  {1S2473T77——Production parts number
  {[MA161]——Supply parts number
- The supply parts number is described alone in the replacement parts list.
- [D] .....For all European areas except United Kingdom.
- [B] .....For United Kingdom.
- [N] .....For Asia, Latin America, Middle East and Africa areas.
- [A] .....For Australia.

• This schematic diagram may be modified at any time with the development of new technology.

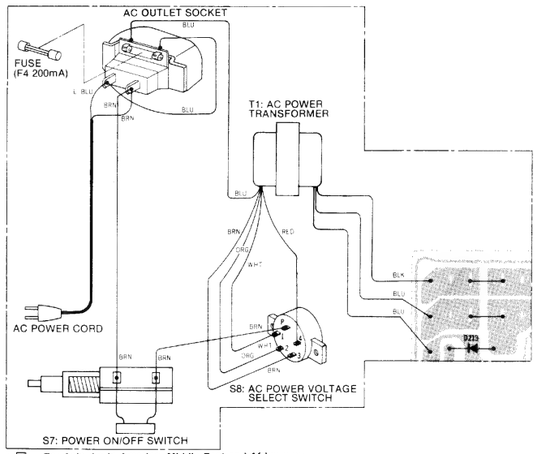
TERMINATIONS



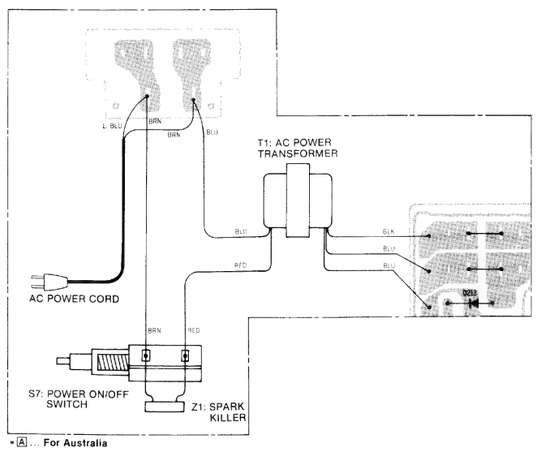
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



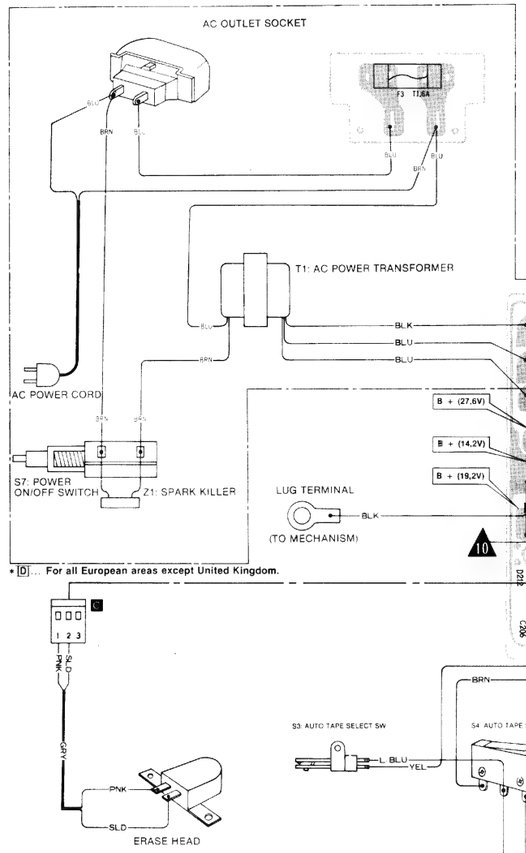
* B ... For United Kingdom



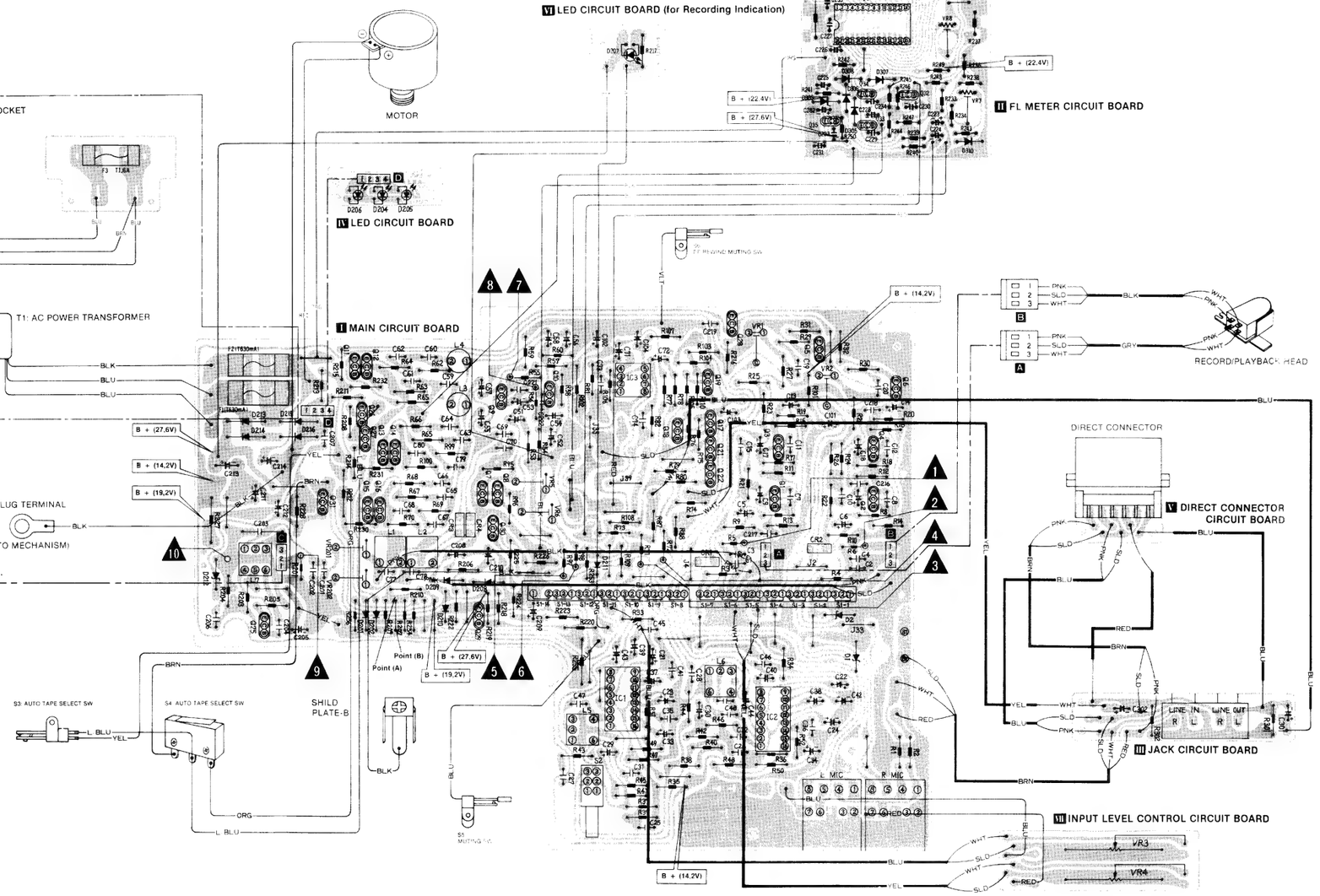
* N ... For Asia, Latin America, Middle East and Africa areas



* A ... For Australia



* D ... For all European areas except United Kingdom.



NOTES:

BLK .....Black
BLU .....Blue
BRN.....Brown
GRY.....Gray
GRN ...Green
L. BLU ...Light Blue
NIL .....No Color Mark
ORG ...Orange
PNK.....Pink
RED.....Red
SLD .....Shield Wire
VLT .....Violet
WHT.....White
YEL .....Yellow

NOTES:

- The circuit shown in ▨ on the conductor indicates printed circuit on the back side of the printed circuit board.
- Values indicated in ▭ are DC voltage between the grond and electrical parts.
- All voltage values shown in circuitry are under no signal condition. Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
  Normal .....Voltage at normal tape mode
  Cue/review OFF.....Voltage at modes other than cue/review
  Stop .....Voltage at stop mode
  Playback.....Voltage at playback mode
  For measurent, use VTVM.
- The supply parts number is described alone in the replacement parts list.
- **This circuit board diagram may be modified at any time with the development of new technology.**

$IC_{1,2}$ [NE646N]

1	7.1V	9	0V
2	7.3V	10	7.2V
3	7.7V	11	7.2V
4	7.2V	12	7.1V
5	7.1V	13	7.2V
6	7.3V	14	7.2V
7	6.5V	15	7.0V
8	6.5V	16	14.2V

IC_3

1	9.6V
2	9.6V
3	9.6V
4	0V
5	9.6V
6	9.6V
7	9.6V
8	19.3V

$Q_{1,2}$ [2SC1328]

B	1.2V
C	1.84V
E	0.7V

$Q_{3,4}$ [2SC1328]

B	1.84V
C	5.2V
E	1.25V

$Q_{5,6}$ [2SC945]

	Metal, CrO_2
B	0.66V
C	0V
E	0V

$Q_{7,8}$ [2SC945]

B	0.67V
C	0V
E	0V

$Q_{9,10}$ [2SC945]

B	2.6V
C	9.0V
E	2.2V

$Q_{11,12}$ [2SC945]

	Normal
B	0.63V
C	0V
E	0V

$Q_{13,14}$ [2SC945]

	CrO_2
B	0.66V
C	0V
E	0V

$Q_{15,16}$ [2SC945]

	Metal
B	0.67V
C	0V
E	0V

$Q_{17,18}$ [2SC945]

	Cue/Review ON
B	0.72V
C	0V
E	0V

Q_{19} [2SA999]

	Cue/Review ON	Cue/Review OFF
B	13.1V	14.1V
C	13.7V	0V
E	13.7V	14.2V

$Q_{21,22}$ [2SD965]

B	0.67V
C	0V
E	0V

Q_{25} [2SD592]

	Normal	CrO_2	Metal
B	0.41V	0.35V	0.14V
C	4.9V	7.2V	13.0V
E	0.18V	0.26V	0.5V

Q_{26} [2SC945]

	Normal	CrO_2
B	0V	19.2V
C	19.2V	19.2V
E	0.1V	18.6V

Q_{27} [2SC945]

	Normal	CrO_2
B	0.7V	0V
C	0V	19.2V
E	0V	0V

Q_{29} [2SC945]

	STOP	PLAYBACK
B	0.6V	0.25V
C	0V	24V
E	0V	0V

Q_{30} [2SC999]

	STOP	PLAYBACK
B	2.3V	24V
C	2.95V	0.06V
E	3.0V	24V

Q_{22} [2SC945]

	Metal, CrO_2	Normal
B	0V	0.7V
C	0.66V	0V
E	07V	0V

Q_{31} [2SD794]

B	20V
C	26.3V
E	19.2V

Q_{32} [2SC945]

B	0V
C	1.57V
E	0V

Q_{34} [2SC945]

B	—
C	—
E	0V

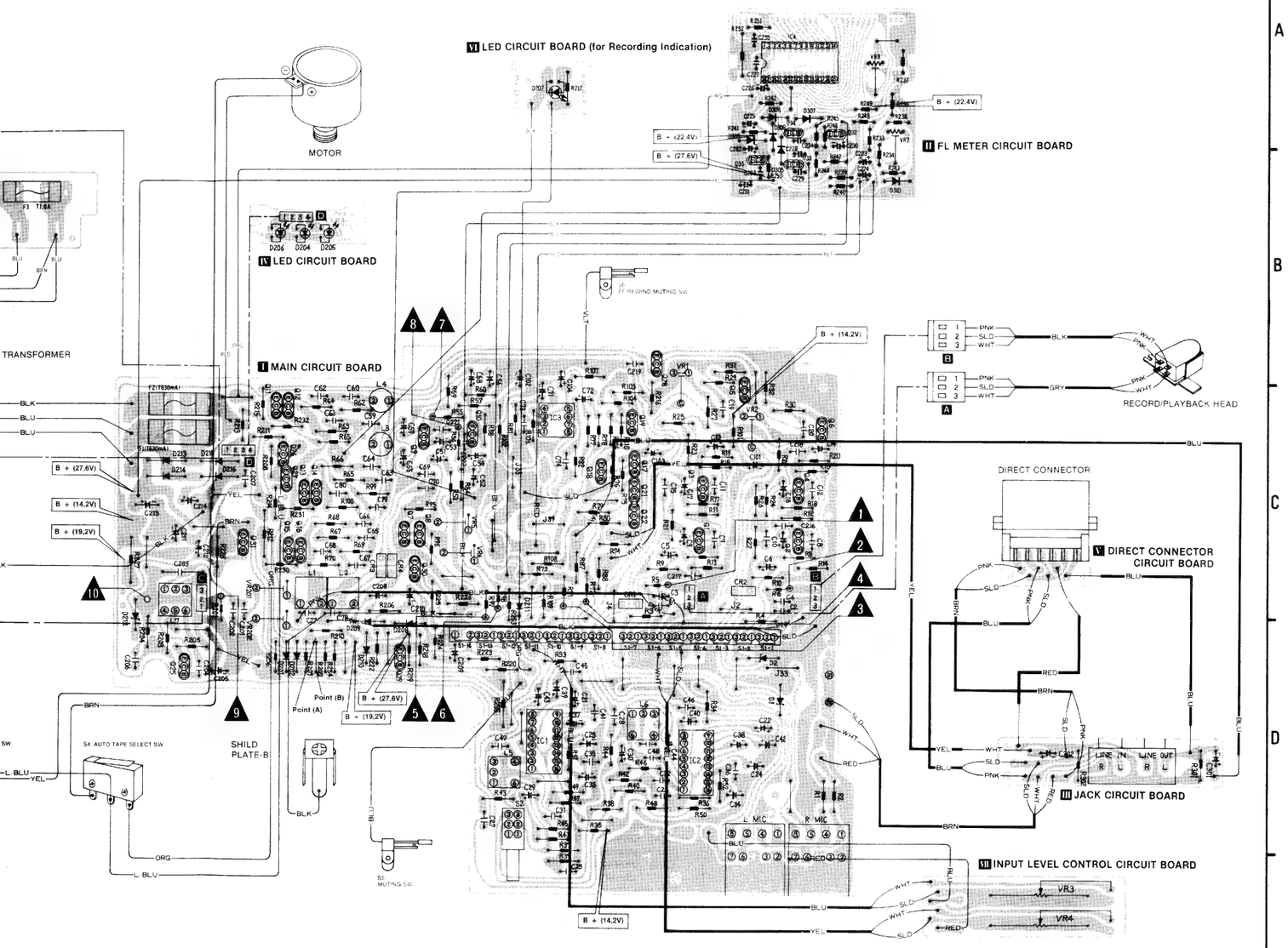
Q_{33} [2SC945]

B	—
C	—
E	0V

Q_{35} [2SD794]

B	22.9V
C	27.6V
E	22.4V

AGRAM



on the conductor indicates printed circuit on
rinted circuit board.
are DC voltage between the grond and

wn in circuitry are under no signal condition.
cified, voltage measurement conditions are that tape travel is at STOP,
L, and Dolby NR switch at OFF.
oltage at normal tape mode
oltage at modes other than cue/review
oltage at stop mode
oltage at playback mode
TVM.

ber is described alone in the replacement parts list.

d diagram may be modified at any time ment of new technology.

IC1, 2 [NE646N]

1	7.1V	9	0V
2	7.3V	10	7.2V
3	7.7V	11	7.2V
4	7.2V	12	7.1V
5	7.1V	13	7.2V
6	7.3V	14	7.2V
7	6.5V	15	7.0V
8	6.5V	16	14.2V

IC3

1	9.6V
2	9.6V
3	9.6V
4	0V
5	9.6V
6	9.6V
7	9.6V
8	19.3V

Q1, 2 [2SC1328]

B	1.2V
C	1.84V
E	0.7V

Q7, 8 [2SC945]

B	0.67V
C	0V
E	0V

Q3, 4 [2SC1328]

B	1.84V
C	5.2V
E	1.25V

Q9, 10 [2SC945]

B	2.8V
C	9.0V
E	2.2V

Q5, 6 [2SC945]

	Metal, CrO_2
B	0.66V
C	0V
E	0V

Q11, 12 [2SC945]

	Normal
B	0.63V
C	0V
E	0V

Q13, 14 [2SC945]

	CrO_2
B	0.66V
C	0V
E	0V

Q15, 16 [2SC945]

	Metal
B	0.67V
C	0V
E	0V

Q17, 18 [2SC945]

	Cue/Review ON
B	0.72V
C	0V
E	0V

Q19 [2SA999]

	Cue/Review ON	Cue/Review OFF
B	13.1V	14.1V
C	13.7V	0V
E	13.7V	14.2V

Q21, 22 [2SD965]

	Normal	CrO_2
B	0.67V	
C	0V	
E	0V	

Q25 [2SD592]

	Normal	CrO_2	Metal
B	0.41V	0.35V	0.14V
C	4.9V	7.2V	13.0V
E	0.18V	0.26V	0.5V

Q26 [2SC945]

	Normal	CrO_2
B	0V	19.2V
C	19.2V	19.2V
E	0.1V	18.6V

Q27 [2SC945]

	Normal	CrO_2
B	0.7V	0V
C	0V	19.2V
E	0V	0V

Q28 [2SC945]

	STOP	PLAYBACK
B	0.6V	0.25V
C	0V	24V
E	0V	0V

Q30 [2SC999]

	STOP	PLAYBACK
B	2.3V	24V
C	2.95V	0.06V
E	3.0V	24V

Q23 [2SC945]

	Metal, CrO_2	Normal
B	0V	0.7V
C	0.66V	0V
E	07V	0V

Q31 [2SD794]

B	20V
C	26.3V
E	19.2V

Q32 [2SC945]

B	0V
C	1.57V
E	0V

Q34 [2SC945]

B	—
C	—
E	0V

Q33 [2SC945]

B	—
C	—
E	0V

Q35 [2SD794]

B	22.9V
C	27.6V
E	22.4V

NOTES: RESISTORS
ERD.....Carbon
ERG .....Metal-oxide
ERS.....Metal-oxide
ERO .....Metal-film
ERX.....Metal-film
ERQ .....Fuse type metallic
ERC.....Solid
ERF.....Cement

CAPACITORS
ECBA .....Ceramic
ECG□.....Ceramic
ECK□.....Ceramic
ECC□.....Ceramic
ECF□.....Ceramic
ECQM.....Polyester film
ECQE .....Polyester film
ECQF .....Polypropylene
ECE□.....Electrolytic
ECEㅁN ...Non polar electrolytic
ECQS .....Polystyrene
ECS□.....Tantalum
QCS .....Tantalum

REPLACEMENT PARTS LIST

Important safety notice
Components identified by △ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

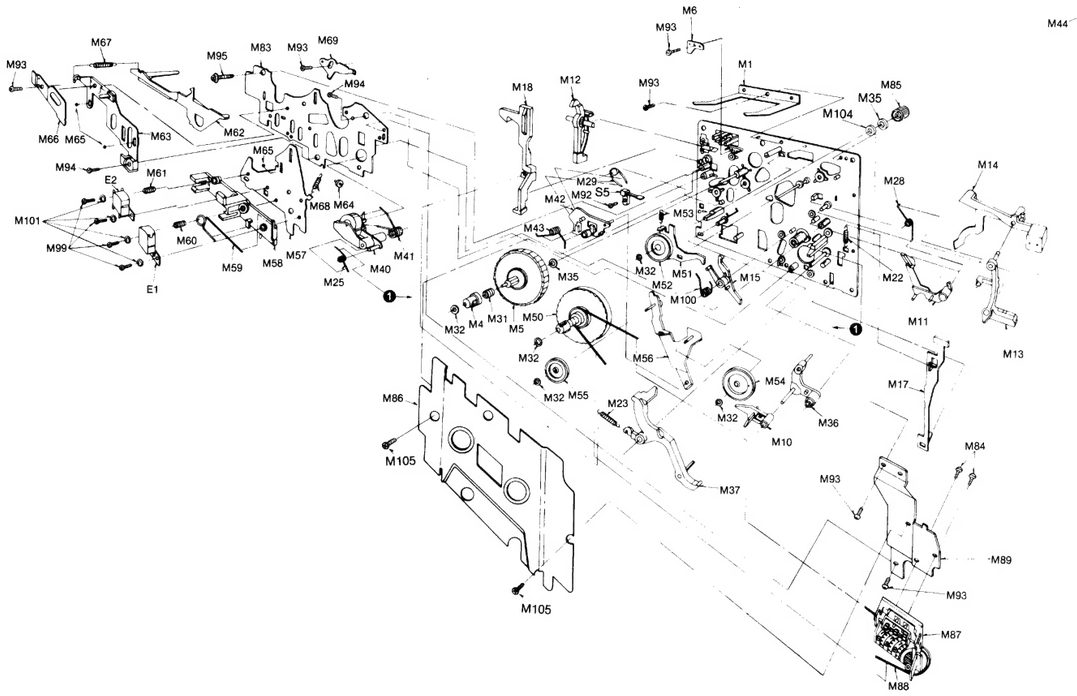
Ref No.	Part No.
RESISTORS	
R 1, 2	ERD25TJ273
R 3, 4	ERD25FJ103
R 5, 6	ERD25FJ100
R 7, 8	ERD25FJ181
R 9, 10	ERD25FJ560
R 11, 12	ERD25TJ104
R 13, 14	ERD25FJ682
R 15, 16	ERD25TJ104
R 17, 18	ERD25FJ472
R 19, 20	ERD25FJ821
R 21, 22	ERD25TJ124
R 23, 24	ERD25FJ472
R 25, 26	ERD25TJ393
R 27, 28	ERD25FJ472
R 29, 30	ERD25FJ562
R 31, 32	ERD25TJ104
R 33, 34, 35, 36	ERD25FJ102
R 37, 38	ERD25TJ105
R 39, 40	ERD25FJ332
R 41, 42	ERD25TJ474
R 43, 44	ERD25FJ181
R 45, 46	ERD25TJ473
R 47, 48	ERD25FJ102
R 49, 50	ERO25CKG2003
R 51, 52	ERD25TJ274
R 53, 54	ERD25FJ392
R 55, 56	ERD25TJ684
R 57, 58	ERD25FJ272
R 59, 60	ERD25FJ681
R 61, 62	ERD25FJ330
R 63, 64	ERD25FJ470
R 65, 66	ERD25FJ562
R 67, 68	ERD25FJ272
R 69, 70	ERD25FJ122
R 71, 72	ERD25FJ681
R 73, 74	ERD25TJ273
R 75, 76	ERD25FJ220
R 77, 78	ERO25CKG2702
R 79, 80	ERD25FJ102
R 81, 82	ERO25CKG1003
R 83, 84	ERD25FJ103
R 85, 86	ERD25FJ562
R 87, 88	ERD25FJ102
R 95, 96	ERD25TJ563
R 97, 98	ERD25FJ272
R 99, 100	ERD25FJ682
R 101	ERD25FJ561
R 102 [DB]	ERG1ANJ221
[For all European areas.]	
[AN]	ERD25FJ221
[For Australia, Asia, Latin America, Middle East and Africa areas.]	
R 103	ERD25FJ222
R 104	ERD25FJ103
R 105	ERD25FJ222
R 106, 107	ERD25TJ683
R 108	ERD25FJ182
R 109	ERD25FJ472
R 110	ERD25FJ562
R 201	ERD25FJ1R0
R 203, 204	ERD25FJ562
R 205	ERD25FJ100
R 206	ERD25FJ102
R 207	ERD25FJ220
R 208	ERD25FJ182
R 209	ERD25FJ391
R 210	ERD25FJ471
R 211	ERD25FJ122
R 212	ERD50FJ102
R 213	ERD25FJ222
R 214, 215	ERD25FJ103
R 216	ERD25FJ682
R 217	ERD25FJ122
R 218	ERD25TJ333
R 219	ERD25TJ224
R 220	ERD25FJ222
R 222 [DB]	ERQ14AJ121
[For all European areas.]	
[AN]	ERD25TJ121
[For Australia, Asia, Latin America, Middle East and Africa areas.]	
R 223	ERD25FJ272
R 224	ERD25FJ102
R 225	ERD25FJ562
R 226	ERD25TJ123
R 227 [DB]	ERG1ANJ101
[For all European areas.]	
[AN]	ERC12GJ101
[For Australia, Asia, Latin America, Middle East and Africa areas.]	
R 228	ERD25FJ102
R 230, 231, 232	ERD25FJ103
R 233, 234	ERD25FJ332
R 237, 238	ERD25FJ822
R 239, 240	ERD25FJ681
R 241, 242	ERD25TJ684
R 243	ERD25FJ331
R 244	ERD25FJ102
R 245, 246	ERD25TJ684
R 247	ERD25FJ332
R 248	ERD25FJ103
R 249	ERG1ANJ181
R 250	ERD25FJ102
R 251	ERD25FJ103
R 252	ERG2ANJ121
R 253	ERD25FJ102
R 254 [DB]	ERD2FCG680
[For all European areas.]	
[AN]	ERD25FJ560
[For Australia, Asia, Latin America, Middle East and Africa areas.]	
R 256 [DB]	ERD25FJ330
[For all European areas.]	
[AN]	ERD25FJ470
[For Australia, Asia, Latin America, Middle East and Africa areas.]	
R 301, 302	ERD25TJ683

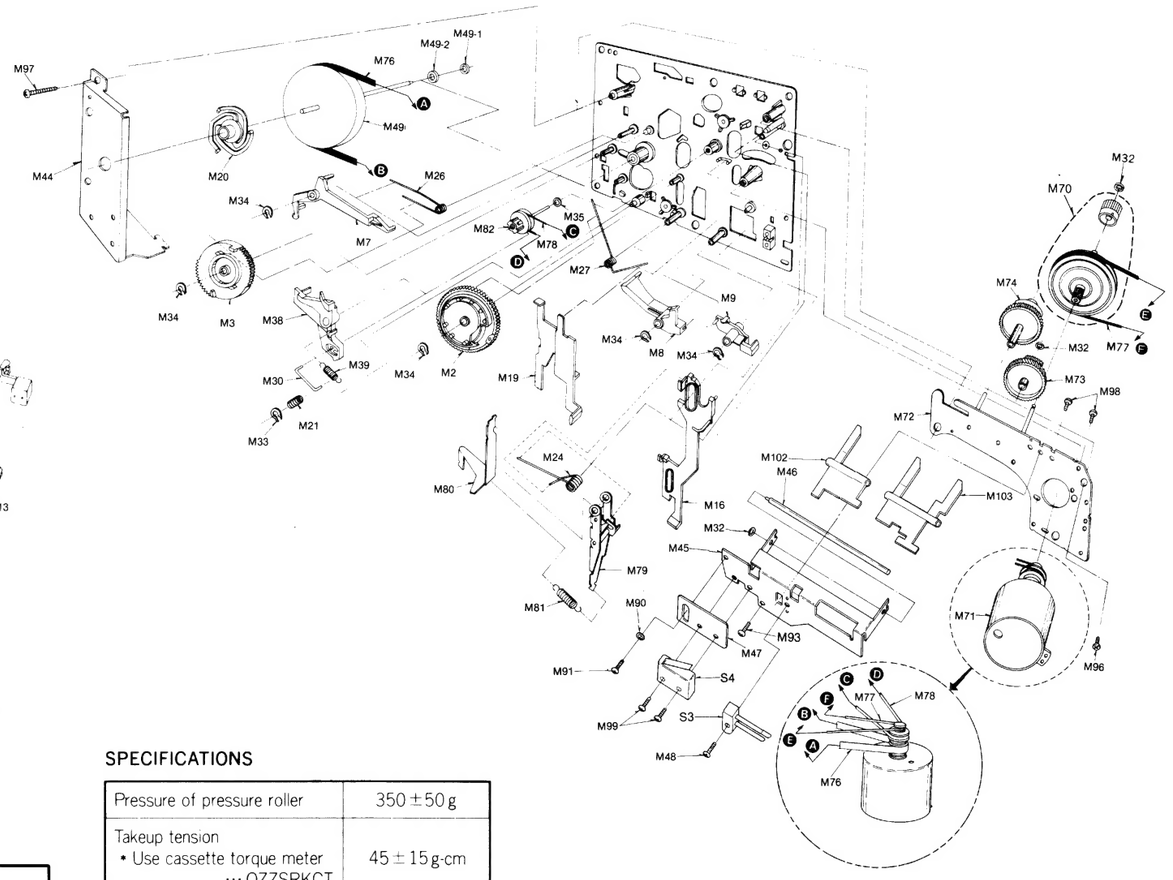
Ref No.	Part No.
VARIABLE RESISTORS	
VR 1, 2	EVNM4AA00B24
VR 3, 4	QVAG1AU10A24
VR 5, 6	EVNM4AA00B24
VR 7	EVTS3MA00B23
VR 8	EVTS3MA00B14
VR 201, 202	EVNM4AA00B15
CAPACITORS	
C 1, 2	ECKD1H471KB
C 3, 4	ECKD1H271KB
C 5, 6	ECEA16M10R
C 7, 8	ECKD1H102KB
C 9, 10	ECEA1CS330
C 11, 12	ECCD1H470KC
C 13, 14	ECEA1CS330
C 15, 16	ECQV05273JZ
C 17, 18	ECEA1HS100
C 19, 20	ECQM1H123JZ
C 21, 22	ECEA50MR33R
C 23, 24	ECEA1AS221
C 25, 26	ECQV05273JZ
C 27, 28	ECQM1H562JZ
C 29, 30	ECEA1HS100
C 31, 32	ECQM1H472JZ
C 33, 34	ECEA50ZR33
C 35, 36	ECQV05104JZ
C 37, 38	ECEA1HS100
C 39, 40	ECEA25Z4R7
C 41, 42	ECQM1H473JZ
C 43, 44	ECEA25Z4R7
C 47, 48	ECCD1H560J
C 49, 50	ECQP1392JZ
C 51, 52, 53, 54, 55, 56	ECEA50ZR68
C 57, 58	ECEA1CS330
C 59, 60	ECQM1H473JZ
C 61, 62	ECQV05224JZ
C 63, 64, 65, 66	ECQM1H393JZ
C 67, 68	ECQM1H223JZ
C 69, 70	ECKD1H152KB
C 71, 72	ECEA50Z1
C 73, 74	ECCD1H100J
C 77, 78	ECQP1471JZ
C 79, 80	ECQM1H183JZ
C 101	ECEA1CS221
C 102	ECEA1ES101
C 103	ECEA50Z3R3
C 104	ECEA50Z1
C 201, 202	ECKD1H181KB
C 203	ECQF6332KZ
C 204	ECQM1H153JZ
C 205	ECEA1ES101
C 206	ECQM1H822JZ
C 207	ECKD1H103KF
C 208	ECEA1JS220
C 209	ECEA50Z2R2
C 210	ECEA1VS331
C 211	ECEA1CS331
C 212 △	ECEA1ES101
C 213 △	ECEA1VS102
C 214	ECEA1CS102
C 216, 217, 218	ECCD1H560J
C 221, 222	ECCD1H101K
C 223, 224	ECEA50Z2R2
C 225, 226	ECEA50Z1
C 227	ECQM1H473JZ
C 228	ECEA25Z4R7
C 229	ECCD1H101K
C 230	ECEA1HS100
C 231	ECEA1ES221
C 232	ECEA1ES470
C 233	ECKD1H102KB
C 234, 235	ECQV05104JZ
C 301, 302	ECEA25Z4R7
COMBINATION PARTS	
CR 1, 2	EXRP102K472
CR 3, 4	EXRP122K682
SPARK KILLER	
Z 1 △	ECQU2A103MF
TRANSISTORS	
Q 1, 2, 3, 4	2SC1328-S
Q 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	2SC945-Q
Q 19	2SA999
Q 21, 22	2SD965
Q 25	2SD592
Q 26, 27, 28, 29	2SC945-Q
Q 30	2SA999
Q 31	2SD794
Q 32, 33, 34	2SC945-Q
Q 35	2SD794
DIODES & RECTIFIERS	
D 1, 2	RD6R8EB2
D 201	SM112
D 202	MA161
D 204	TLG205
D 205	TLY205
D 206	TLR205
D 207	LN216RP
D 208, 209	MA161
D 210	SM112
D 211	MA161
D 212 △	RD20EB3
D 213, 214, 215, 216 △	SM112
D 305, 306	MA161
D 307	MV121
D 308	MA161
D 309	RD24EB1
D 310	MV121
INTEGRATED CIRCUITS	
IC 1, 2	NE646N
IC 3	AN6552
IC 4	AN6870N

Ref No.	Part No.	Part Name & Description
		COILS
L 1, 2	QLQX1032W	Bias Trap Coil
L 3, 4	QLQX2421Y	Peaking Coil
L 5, 6	SLM1Z19	MPX Filter
L 7	QLB0198	Bias Oscillation Coil
		TRANSFORMER
T 1		
[D] △	QLPD72EKE	AC Power Transformer [For all European areas except United Kingdom.]
[N] △	QLPN75EKE	AC Power Transformer [For Asia, Latin America, Middle East and Africa areas.]
[BA] △	QLPZ20EKE	AC Power Transformer [For United Kingdom and Australia.]
		FUSES
F 1, 2		
[DB] △	XBAQ0008	Fuse (T 630mA) [For all European areas.]
F 3		
[D] △	XBAQ0010	Fuse (T 1.6A) [For all European areas except United Kingdom.]
F 4		
[N] △	XBA2F02NM100	Fuse (200mA) [For Asia, Latin America, Middle East and Africa areas.]
		SWITCHES
S 1	QSSE203	Slide Switch (Record/Playback Selector)
S 2	QSW2232	Push Switch (Dolby IN/OUT)
S 3	QSB0253	Leaf Switch (Auto Tape Selector)
S 4	AH32229	Micro Switch (Auto Tape Selector)
S 5	QSB0251	Leaf Switch (Rec-Mute ON/OFF)
S 6	QSB0251	Leaf Switch (Fast Forward/Rewind Muting)
S 7 △	QSW1117AS	Push Switch (Power ON/OFF)
S 8		
[N] △	QSR1407H	Rotary Switch (Voltage Selector) [For Asia, Latin America, Middle East and Africa areas.]
		JACKS
J 1, 2	QJA0253	Microphone Jack

RS-5 RS-5

MECHANICAL PARTS LOCATION





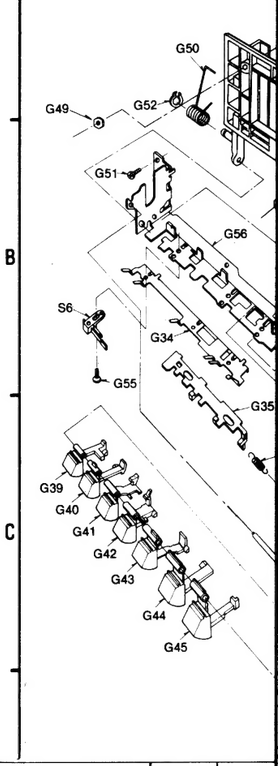
When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

SPECIFICATIONS

Pressure of pressure roller	350 ± 50 g
Takeup tension • Use cassette torque meter ··· QZZSRKCT	45 ± 15 g-cm
Wow and flutter; (JIS) • Use test tape ··· QZZCWAT	Less than 0.06% (WRMS)

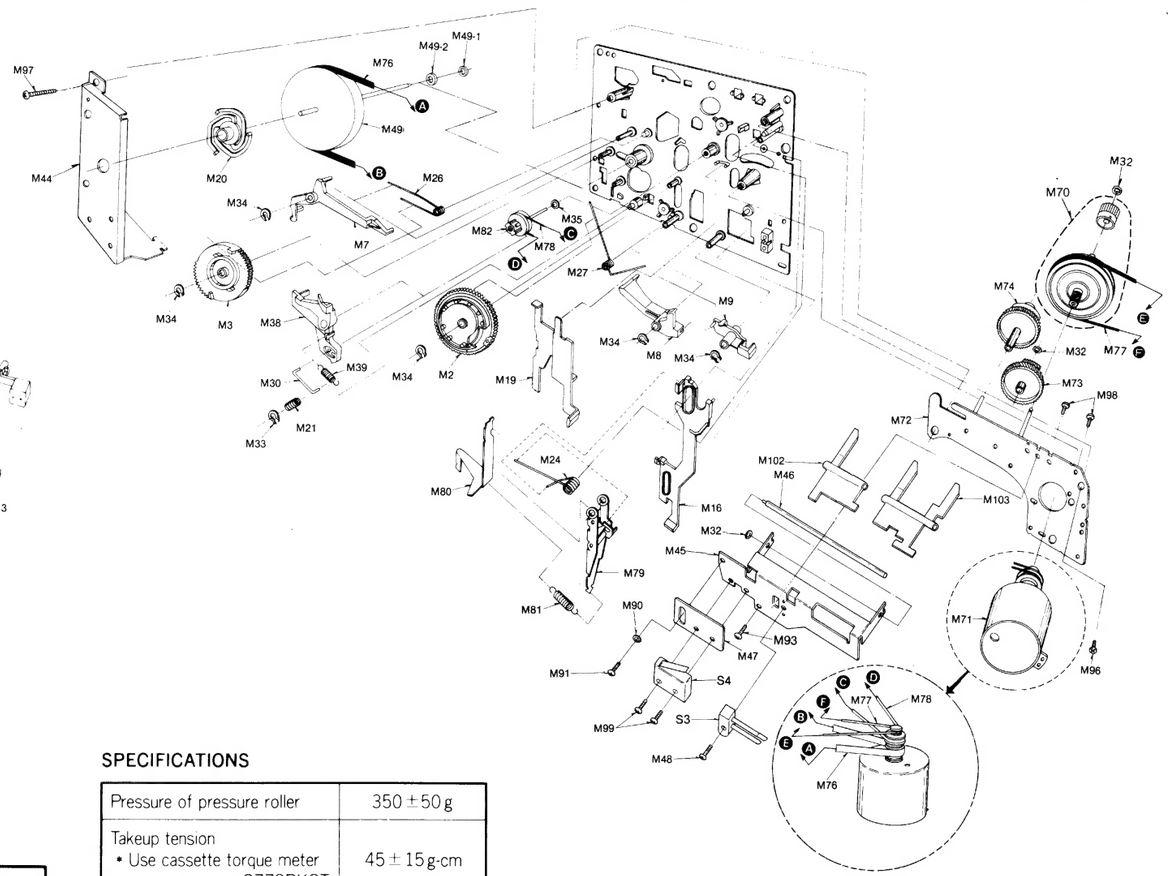
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
	MECHANICAL PARTS	
M1	QBP1874	Cassette Pressure Spring
M2	QDG1201	Main Gear
M3	QDG1202	Sub Gear
M4	QMB1336	Supply Reel Table Hub
M5	QDR1139	Supply Reel Table
M6	QMF2118	Fast Forward Arm Bracket
M7	QML3581	Sub Control Lever
M8	QML3583	Main Control Lever
M9	QML3584	Record Reverse Lever
M10	QML3586	Head Base Plate Lift Lever
M11	QML3594	Auto-Stop Release Arm
M12	QML3603	Erase Safety Lever
M13	QML3604	Auto-Stop Driving Lever
M14	QML3605	Auto-Stop Detection Lever
M15	QML3592	Change Lever
M16	QMR1820	Record Rod
M17	QMR1821	Auto-Stop Connection Rod
M18	QMR1822	Eject Rod
M19	QMR1824	Control Rod
M20	QMZ1239	Flywheel Thrust Retainer
M21	QBC1357	Lock Pin Pressure Spring
M22	QBT1682	Auto-Stop Connection Rod Spring
M23	QBT1894	Main Lever Spring
M24	QBN1739	Selection Lever Spring
M25	QBN1742	Pressure Roller Release Spring
M26	QBN1744	Sub Gear Spring
M27	QBN1802	Main Gear Spring
M28	QBN1746	Auto-Stop Lever Spring
M29	QBN1747	Connection Spring
M30	QBS1128	Lock Pin
M31	QBC1372	Reel Table Spring
M32	QBW2008	Poly Washer 2φ
M33	XUB4FT	Stop Ring 4φ
M34	XUB3FT	Stop Ring 3φ
M35	QBW2012	Poly Washer
M36	QXL1354	Sub Lever Assembly
M37	QXL1355	Main Lever Assembly
M38	QML3582	Pause Lock Lever
M39	QBT1896	Lever Release Spring
M40	QXL1381	Pressure Roller Assembly
M41	QBN1743	Pressure Roller Spring
M42	QML3588	Fast Forward Lever
M43	QBN1748	Fast Forward Spring
M44	QMA4063	Flywheel Retainer
M45	QMA3920	Detection Lever Angle
M46	QMS2546	Detection Lever Shaft
M47	QMF1682	Switch Retaining Plate
M48	XSN2+6	Screw +2×6
M49	QXF0164	Flywheel Assembly
M49-1	QBW2049	Poly Washer
M49-2	QBW2026	Washer
M50	QXD1143	Takeup Reel Table Assembly
M51	QXL1382	Idler Lever Assembly
M52	QXi0111	Takeup Idler Assembly
M53	QBT1893	Takeup Idler Spring
M54	QXi0113	Fast Forward Idler Assembly
M55	QXi0112	Rewind Idler Assembly
M56	QXL1383	Fast Forward Arm Assembly
M57	QMK1840	Head Base Plate
M58	QMZ1241	Head Spacer
M59	QBN1740	Head Pressure Spring
M60	QBC1278	Head Spring (for Record/Playback Head)
M61	QBCA0008	Head Spring (for Erase Head)
M62	QML3591	Brake Arm
M63	QMZ1240	Sub Head Base Plate
M64	QMN2550	Roller
M65	QDK1017	Steel Ball 2φ
M66	QBP1873	Head Base Plate Pressure Spring
M67	QBT1597	Brake Arm Spring
M68	QBT1892	Head Release Spring
M69	QMA3858	Head Adjustment Plate
M70	QZK0241	Takeup Gear Assembly
M71	QXU0170	Motor Assembly
M72	QXK2286	Sub Chassis Assembly
M73	QDG1199	Auto-Stop Gear
M74	QDG1200	Cam Gear
M76	QDB0281	Capstan Belt
M77	QDB0274	Takeup Belt
M78	QDB0273	Fast Forward Belt
M79	QXL1360	Record/Playback Selection Arm Assembly
M80	QML3580	Record/Playback Selection Lever
M81	QBT1895	Record/Playback Selection Lever Spring
M82	QXP0607	Fast Forward Connection Pulley Assembly
M83	QMK1838	Upper Base Plate
M84	XSN3+5S	Screw +3×5
M85	QDP1828	Fast Forward Pulley
M86	QXH0357H	Chassis Cover Assembly
M87	QXC0079	Tape Counter
M88	QDB0207	Counter Belt
M89	QMAM0150	Counter Angle
M90	XWC26B	Washer 2.6φ
M91	XSN26+6	Screw +2.6×6
M92	XTN2+6B	Tapping Screw +2×6
M93	XTN26+6B	Tapping Screw +2.6×6
M94	XTN26+10B	Tapping Screw +2.6×10
M95	XTN26+12B	Tapping Screw +2.6×12
M96	XTN3+10B	Tapping Screw +3×10
M97	XTN3+24B	Tapping Screw +3×24
M98	XSN26+3	Screw +2.6×3
M99	XSN2+10	Screw +2×10
M100	QBN1741	Change Lever Spring
M101	XWG2	Washer 2φ
M102	QML3644	Tape Detection Lever-A (for Metal Tape)
M103	QML3645	Tape Detection Lever-B (for CrO2 Tape)
M104	QBW2085	Poly Washer
M105	XTN26+6BFZ	Tapping Screw +2.6×6



REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description
	CABINET PARTS	
G 1 [B]	QKMM0044S	Main Case "Silver Type" [For United Kingdom.]
[B]	QKMM0044K	Main Case "Black Type" [For United Kingdom.]
[A]	QKMM0047S	Main Case [For Australia.]
[DN]	QKMM0043S	Main Case "Silver Type" [For all European areas, Asia, Latin America, Middle East and Africa areas.]
[DN]	QKMM0043K	Main Case "Black Type" [For all European areas, Asia, Latin America, Middle East and Africa areas.]
G 2	QYBM0046	Bottom Cover Assembly "Silver Type"
	QYBM0046K	Bottom Cover Assembly "Black Type"
G 2-1	QKA1083	Rubber Foot
G 2-2	QHQ1313	Step Screw
G 3	QYFM0057	Cassette Lid Assembly "Silver Type"
	QYFM0057K	Cassette Lid Assembly "Black Type"
G 4	QYK0141	Input Level Control Knob Assembly
G 5	QGG0201	Slide Guide
G 6	QGBM0023	Indicate Plate "Silver Type"
	QGBM0023K	Indicate Plate "Black Type"
G 7	QGOM0087	Switch Button (for Dolby NR)
G 8	QGOM0086	Power Button
G 9	QKJM0046	Obstruction Rod
G 10	QMAM0123	Switch Angle (for S7)
G 11	XSN3+6S	Screw ⊕3×6
G 12	XWA3B	Washer 3φ
G 13	XTN3+10B	Screw ⊕3×10 "Silver Type"
	XTN3+10BFZ	Screw ⊕3×10 "Black Type"
G 14	QMAM0129	Stopper
G 15	QKJM0085	Mechanism Chassis
G 16 [D]	QGSM0175	Main Name Plate [For all European areas except United Kingdom.]
[N]	QGSM0182	Main Name Plate [For Asia, Latin America, Middle East and Africa areas.]
[BA]	QGSM0176	Main Name Plate [For United Kingdom and Australia.]
G 17	QMLM0041	Recording Lever
G 18	QBSM0007	Recording Wire
G 19	XTN3+10B	Tapping Screw ⊕3×10
G 20	QNQ1070	Nut 12φ
G 21	XTN3+12B	Tapping Screw ⊕3×12
G 22	QMFM0019	Volume Angle (for VR3, 4)
G 23	XSN2+3	Screw ⊕2×3
G 24	SJS9607	Direct Connector
G 25	QKJM0077	Direct Connector Holding Plate
G 26	QKJM0079	P,C,B Holding Plate
G 27		
[DBA]	QGKM0182	Switch Shelter "Silver Type" [For all European areas and Australia.]
[DBA]	QGKM0182K	Switch Shelter "Black Type" [For all European areas and Australia.]
G 28	QGBM0	"Silver T
	QGBM0	"Black T
G 29	QGRM0	
G 30	QKJM00	
G 31	QGKM0	"Silver T
	QGKM0	"Black T
G 33	XTN26+	
G 34	QBP187	
G 35	QMR183	
G 36	QML359	
G 37	QDG110	
G 38	QMN25	
G 39	QXL149	"Silver
	QXL158	"Black
G 40	QXL149	"Silver
	QXL158	"Black
G 41	QXL149	"Silver
	QXL158	"Black
G 42	QXL149	"Silver
	QXL158	"Black



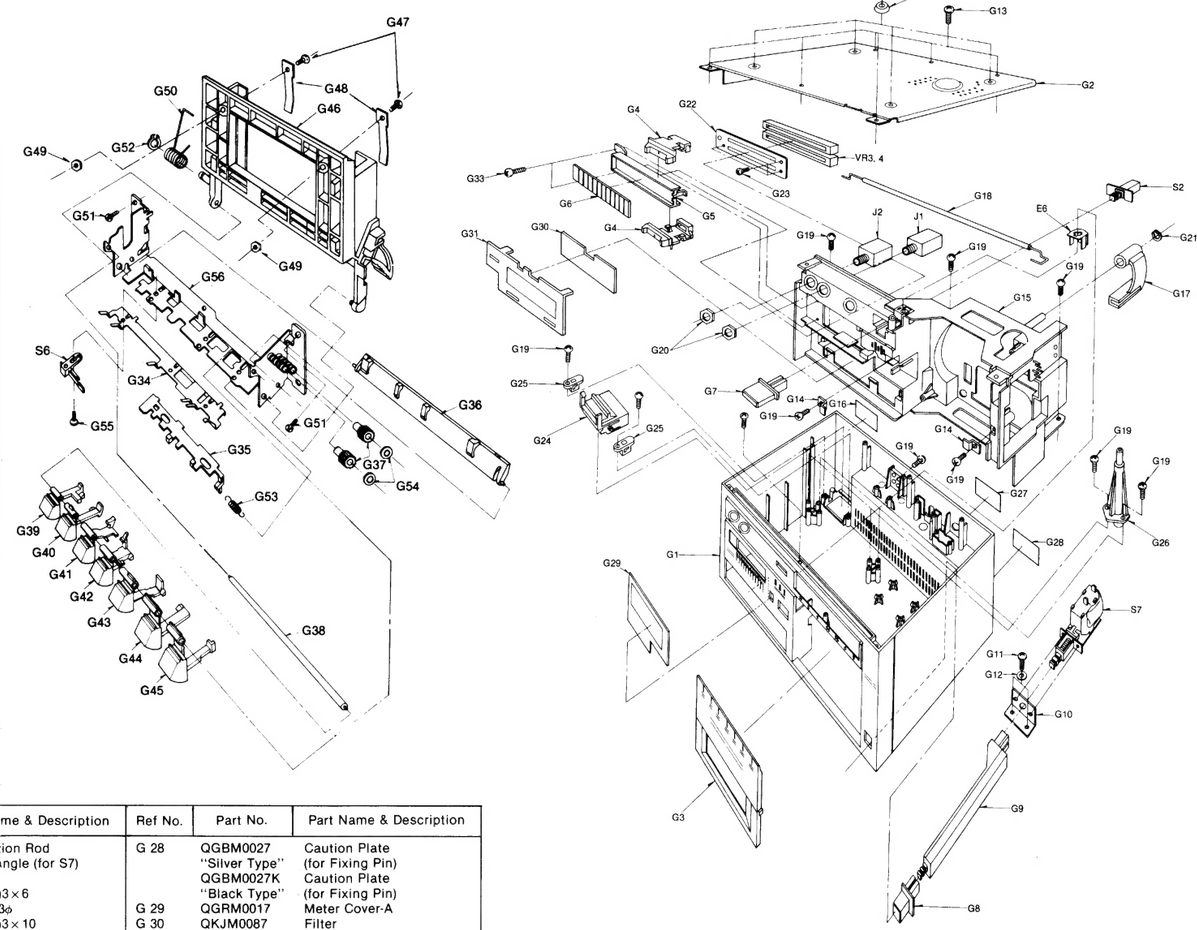
SPECIFICATIONS

Pressure of pressure roller	350 ± 50 g
Takeup tension • Use cassette torque meter ··· QZZSRKCT	45 ± 15 g-cm
Wow and flutter; (JIS) • Use test tape ··· QZZCWAT	Less than 0.06% (WRMS)

mbly notes
als of RS-M51,
s).

rt Name & Description	Ref. No.	Part No.	Part Name & Description
Idler Assembly	M80	QML3580	Record/Playback Selection Lever
Idler Spring	M81	QBT1895	Record/Playback Selection Lever Spring
rward Idler Assembly			
Idler Assembly	M82	QXP0607	Fast Forward Connection Pulley Assembly
rward Arm Assembly			
ase Plate	M83	QMK1838	Upper Base Plate
pacer	M84	XSN3+5S	Screw ⊕3×5
	M85	QDP1828	Fast Forward Pulley
ressure Spring	M86	QXH0357H	Chassis Cover Assembly
pring	M87	QXC0079	Tape Counter
cord/Playback Head)	M88	QDB0207	Counter Belt
pring (for Erase Head)			
rm	M89	QMAM0150	Counter Angle
ad Base Plate	M90	XWC26B	Washer 2.6φ
	M91	XSN26+6	Screw ⊕2.6×6
ll 2φ	M92	XTN2+6B	Tapping Screw ⊕2×6
ase Plate Pressure Spring	M93	XTN26+6B	Tapping Screw ⊕2.6×6
rm Spring	M94	XTN26+10B	Tapping Screw ⊕2.6×10
elease Spring	M95	XTN26+12B	Tapping Screw ⊕2.6×12
	M96	XTN3+10B	Tapping Screw ⊕3×10
djustment Plate	M97	XTN3+24B	Tapping Screw ⊕3×24
Gear Assembly	M98	XSN26+3	Screw ⊕2.6×3
ssembly	M99	XSN2+10	Screw ⊕2×10
ssis Assembly	M100	QBN1741	Change Lever Spring
op Gear	M101	XWG2	Washer 2φ
ar	M102	QML3644	Tape Detection Lever-A (for Metal Tape)
Belt			
Belt	M103	QML3645	Tape Detection Lever-B (for CrO2 Tape)
ward Belt			
Playback Selection Arm	M104	QBW2085	Poly Washer
y	M105	XTN26+6BFZ	Tapping Screw ⊕2.6×6

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
		CABINET PARTS
G 1	[B] QKMM0044S	Main Case "Silver Type"
	[For United Kingdom.]	
	[B] QKMM0044K	Main Case "Black Type"
	[For United Kingdom.]	
	[A] QKMM0047S	Main Case
	[For Australia.]	
	[DN] QKMM0043S	Main Case "Silver Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]	
	[DN] QKMM0043K	Main Case "Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]	
G 2	QYBM0046	Bottom Cover Assembly "Silver Type"
	QYBM0046K	Bottom Cover Assembly "Black Type"
G 2-1	QKA1083	Rubber Foot
G 2-2	QHQ1313	Step Screw
G 3	QYFM0057	Cassette Lid Assembly "Silver Type"
	QYFM0057K	Cassette Lid Assembly "Black Type"
G 4	QYK0141	Input Level Control Knob Assembly
G 5	QGG0201	Slide Guide
G 6	QGBM0023	Indicate Plate "Silver Type"
	QGBM0023K	Indicate Plate "Black Type"
G 7	QGOM0087	Switch Button (for Dolby NR)
G 8	QGOM0086	Power Button
G 9	QKJM0046	Obstruction Rod
G 10	QMAM0123	Switch Angle (for S7)
G 11	XSN3+6S	Screw ⊕3×6
G 12	XWA3B	Washer 3φ
G 13	XTN3+10B	Screw ⊕3×10 "Silver Type"
	XTN3+10BFZ	Screw ⊕3×10 "Black Type"
G 14	QMAM0129	Stopper
G 15	QKJM0085	Mechanism Chassis
G 16	[D] QGSM0175	Main Name Plate
	[For all European areas except United Kingdom.]	
	[N] QGSM0182	Main Name Plate
	[For Asia, Latin America, Middle East and Africa areas.]	
	[BA] QGSM0176	Main Name Plate
	[For United Kingdom and Australia.]	
G 17	QMLM0041	Recording Lever
G 18	QBSM0007	Recording Wire
G 19	XTN3+10B	Tapping Screw ⊕3×10
G 20	QNQ1070	Nut 12φ
G 21	XTN3+12B	Tapping Screw ⊕3×12
G 22	QMFM0019	Volume Angle (for VR3, 4)
G 23	XSN2+3	Screw ⊕2×3
G 24	SJS9607	Direct Connector
G 25	QKJM0077	Direct Connector Holding Plate
G 26	QKJM0079	P,C,B Holding Plate
G 27		
	[DBA] QGKM0182	Switch Shelter "Silver Type"
	[For all European areas and Australia.]	
	[DBA] QGKM0182K	Switch Shelter "Black Type"
	[For all European areas and Australia.]	
G 28	QGBM0027	Caution Plate (for Fixing Pin) "Silver Type"
	QGBM0027K	Caution Plate (for Fixing Pin) "Black Type"
G 29	QGRM0017	Meter Cover-A
G 30	QKJM0087	Filter
G 31	QGKM0180	Meter Cover-B "Silver Type"
	QGKM0180K	Meter Cover-B "Black Type"
G 33	XTN26+8B	Tapping Screw ⊕2.6×8
G 34	QBP1875	Obstruction Lever Spring
G 35	QMR1823	Obstruction Rod
G 36	QML3593	Lock Arm
G 37	QDG1102	Holder Gear
G 38	QMN2554	Operation Lever Shaft
G 39	QXL1493	Eject Button Assembly "Silver Type"
	QXL1581	Eject Button Assembly "Black Type"
G 40	QXL1494	Record Button Assembly "Silver Type"
	QXL1582	Record Button Assembly "Black Type"
G 41	QXL1495	Rewind/Review Button Assembly "Silver Type"
	QXL1583	Rewind/Review Button Assembly "Black Type"
G 42	QXL1496	Fast Forward/Cue Button Assembly "Silver Type"
	QXL1584	Fast Forward/Cue Button Assembly "Black Type"
G 43	QXL1497	Playback Button Assembly "Silver Type"
	QXL1585	Playback Button Assembly "Black Type"
G 44	QXL1498	Stop Button Assembly "Silver Type"
	QXL1586	Stop Button Assembly "Black Type"
G 45	QXL1499	Pause Button Assembly "Silver Type"
	QXL1587	Pause Button Assembly "Black Type"
G 46	QKFM6007K	Cassette Holder
G 47	XSN2+5	Screw ⊕2×5
G 48	QBP1899	Holder Spring
G 49	XNG2E	Nut 2φ
G 50	QBN7008	Cassette Holder Spring
G 51	XTN26+6B	Tapping Screw ⊕2.6×6
G 52	XUB5FT	Stop Ring 5φ
G 53	QBT1597	Obstruction Rod Spring
G 54	QBW2082	Washer
G 55	XTN2+6B	Tapping Screw ⊕2×6
G 56	QXA1044	Operation Button Angle Assembly
		ACCESSORIES
A 1	SJP2241-1	Connection Cord
A 2	SHE135	Fixing Pin "Silver Type"
	SHE135-1	Fixing Pin "Black Type"
A 3	[D] QQT3307	Instruction Book
	[For all European areas except United Kingdom.]	
	[B] QQT3308	Instraction Book
	[For United Kingdom.]	
	[N] QQT3309	Instruction Book
	[For Asia, Latin America, Middle East and Africa areas.]	
	[A] QQT3326	Instruction Book
	[For Australia.]	
		PACKINGS
P 1	[N] QPNM0192	Inside Carton
	[For Asia, Latin America, Middle East and Africa areas.]	
	[DBA] QPNM0189	Inside Carton
	[For all European areas and Australia.]	
P 2	QPAM0052	Cushion
P 3		
	[DBA] QPSM0009	Pad
	[For all European areas and Australia.]	
P 4	XZB40X50A02	Poly Bag
P 5	QPQ1052	Poly Sheet

MNE
Y.M D DK B BK N NK A
Printed in Japan

ORDER NO. ARD- 8311026P -1

Parts Change Notice

(D)...For all European areas except United Kingdom.
(B)...For United Kingdom.
(N)...For Asia, Latin America, Middle East and Africa areas.
(A)...For Australia.

Model No.

RS-5

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change	*The circled item indicates the reason. If no marking, see the Notes in the bottom column.
1. Improve performance	
2. Change of material or dimension	
3. To meet approved specification	
4. Standardization	
5. Addition	
6. Deletion	
7. Correction	
8. Other	

Interchangeability Code	**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.	
	Parts / Set Production	
A	Original → Early New → Late	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
C	Original → Early New → Late	New parts only may be used in early or late production sets. Stock new parts.
D	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other	

Part Number

Model No.	Ref. No.	Original Part No.	New Part No.	Notes (* - **)	Part Name & Descriptions
RS-5	R49, 50	ERO25CKG2003	ERD25TJ184	1-C	Resistors
"	R65, 66	ERD25FJ562	ERD25FJ332	"	"
"	R210	ERD25FJ471	ERD25FJ391	"	"
"	C3, 4	ECKD1H271KB	———	"	Capacitors
"	C67, 68	ECQM1H223JZ	———	1-A	"
"	C79, 80	ECQM1H183JZ	———	"	"
"	C210	ECEA1VS331	ECEA1VS221	8-A	Capacitor
"	C211	ECEA1CS331	ECEA1CS221	"	"
"	C213 ⚠	ECEA1VS102	ECEA1VSS471	"	"
"	C214	ECEA1CS102	ECEA1CS471	"	"

NOTE:
• Important safety notice
Components identified by ⚠ mark have special characteristics important for safety
When replacing any of these components, use only manufacturer's specified parts

File this Parts Change Notice with your copy of the Service Manual.
Original Service Manual is Model No. RS-5 Order No. ARD82050140C8-10.

Technics
National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan
Printed in Japan.

ORDER NO. ARD- 8311026P -2

Parts Change Notice

(D)...For all European areas except United Kingdom.
(B)...For United Kingdom.
(N)...For Asia, Latin America, Middle East and Africa areas.
(A)...For Australia.

Model No.

RS-5

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change	*The circled item indicates the reason. If no marking, see the Notes in the bottom column.
1. Improve performance	
2. Change of material or dimension	
3. To meet approved specification	
4. Standardization	
5. Addition	
6. Deletion	
7. Correction	
8. Other	

Interchangeability Code		**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.
	Parts / Set Production	
A	Original → Early New → Late	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
C	Original → Early New → Late	New parts only may be used in early or late production sets. Stock new parts.
D	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other	

Part Number

Model No.	Ref. No.	Original Part No.	New Part No.	Notes (*-**)	Part Name & Descriptions
RS-5	Q1, 2	2SC1328-S	2SC1844F	8-A	Transistors
"	Q3, 4	2SC1328-S	2SC945P	"	"
"	Q19, 30	2SA999	2SA1115E	"	"
"	Q21, 22	2SD965	2SD471	"	"
"	Q25	2SD592	2SD471	"	Transistor

File this Parts Change Notice with your copy of the Service Manual.
Orginal Service Manual is Model No. RS-5 Order No. ARD82050140C8-10.

Technics
National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan
Printed in Japan.